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COURSE OF

## LECTURES ON THE BLOOD,

AND ON

THE CHANGES WHICH IT UNDERGOES DURING DISEASE.

*Delivered at the College of France in* 1837-8,

BY

## M. MAGENDIE.

### Lecture VI.

*Effects of the injection of cold water into the veins.—Description of the hæmodynamometer.—Pressure of the blood equable throughout the system.—The arterial pressure nearly the same in different animals.—Causes of variation of pressure.—Action of different substances on the heart.—Exciting effects of coffee.—M. Poiseuille's theory.—Laws respecting the circulation.—Depressing action of digitalis.—The blood does not possess any innate motile force.*

Gentlemen:—At our last meeting I attempted to verify, by experiment, the influence which I had, in theory, attributed to direct refrigeration of the blood on the movement of that liquid. Generalising the observations we had just made on the external application of ice, I injected cold water into the veins, under the impression that I should thereby diminish the pressure of the blood; but this, to my great astonishment, augmented instead of decreasing. Such a result was too directly contradictory of my views for me to rest satisfied of its correctness, without having recourse to further trials. I, therefore, repeated the experiment this morning, and shall now describe the result. The mercurial hæmodynamometer was placed in the femoral artery of a middle-sized dog, and a tube adapted to the jugular vein, for the injection of water at + 4° centigr. The syringe contained 100 grammes. Before the introduction of the liquid the scale marked from 00 to 100 millimetres. As soon as the animal became perfectly calm we commenced. During the first five injections the level of the column of mercury underwent no notable variation; between the sixth and tenth it rose a few millimetres. We then introduced a thermometer into the cavity of the abdomen, and found the temperature + 34° centigr. The tissues traversed by the blood were, therefore, not very materially cooled, though a litre of cold water had already passed into the circulation. I now became desirous of trying, in the same animal, what effect the injection of hot water would produce. The oscillations of the mercury were carefully noted down; and here is a summary of what we observed. The column, which stood between 00 and 115 millimetres, fell, during three injections of water, at + 45° centigr. to

55—70; 65—80; 50—55 mill.

Towards the fourth it rose to

80—90; 85—95 mill.

The fifth, sixth, and seventh, caused a still more rapid ascent.

The scale marked

100—120; 115—140; 125—145 mill.

At the eighth the mercury suddenly redescended to

60—80; 55—75 mill.

I was at a loss to know to what I should ascribe this spontaneous diminution of the pressure, when I perceived that the animal had just had an abundant miction. The explanation of this phenomenon of vital statics will appear simple, if you reflect on the influence exercised by the parietes and viscera of the abdomen on the movement of the blood. The change in the state of the bladder, from fulness to vacuity, gives you the mechanical reason of it. The dog, enormously swollen by repeated injections, seemed now on the point of expiring. After the ninth the column had fallen to 30—45 millimetres. Finally, it descended at the tenth to 25 millimetres, and remained stationary at that point. The heart had ceased to contract. On opening the chest we found that organ very considerably dilated with fluid, as we had anticipated would be the case, from the dull sound elicited by percussion of the precordial region. I was fortunate enough, just then, to make an important remark. Having made an opening in the femoral vein, I pressed the walls of the left ventricle with my hand, and produced a jet of blood perfectly analo-

gous to that observed in the arteries during life. The flow of blood was, at once, jerking and continuous. Such, indeed, was the resemblance of the two phenomena, that had I been guided simply by the character of the flow, without taking into consideration the colour of the liquid, I might easily have fancied that the animal was still living. The column which had stopped at 25 millimetres, fell now still farther to 17, 16, 15, 11 millimetres. There was, consequently, a certain amount of pressure in action even after death, due, no doubt, to the abundance of fluid contained in the vessels. This experiment agrees in result with that performed at our last meeting. I had predicted that the elevated temperature of the injected fluid would increase the pressure; the pressure decreased. I had predicted that a fall in the temperature of the liquid would diminish the pressure; the pressure increased. If we wish for accurate results respecting the influence of cold and heat, in its relations to the force with which the blood presses against the walls of the vessels, the first few injections only should be taken note of. The augmented pressure occurring at the end of an experiment, is to be ascribed not to the temperature of the injected liquid, but to its volume. Nearly two litres of distilled water had passed into the circulation.

It appears to me that I cannot, now that I am engaged with the hæmodynamometer, do better than briefly recapitulate, more particularly for the advantage of those among you who have not attended my former courses, some of the more important facts it has served to bring to light. I will commence with a description of its structure. It has received its name from the purpose to which it is applied, namely, the measurement of the force that moves the blood (*αμα*, blood, *δυναμις*, force, *μετρον*, a measure). It consists, as you perceive,† of a glass tube presenting a horizontal branch, a descending vertical branch, and a third ascending branch; these are curved, so as to form a quarter of a circle and a semi-circle, at two different points. A certain quantity of mercury is placed in the tube, and it is evident that when the instrument is in a vertical position, the upper surface of the mercury will be on the same level in both branches. But if the blood be allowed to enter into the horizontal branch by an orifice, which we suppose to communicate with the interior of a vessel, it will press on the surface of the mercury; the metal will, therefore, be depressed to a certain point in the descending branch, and will rise to the same extent in the ascending branch. The degree of depression and elevation is estimated by the two scales, graduated by millimetres, which are attached to the vertical branches of the instrument. When the apparatus is about to be used the horizontal branch is filled with a saturated solution of the subcarbonate of soda, which M. Poiseuille found, after a variety of trials, the best material for preventing the coagulation of the blood. A small brass tube receives into a concavity the extremity of the horizontal branch of the glass tube, and is fixed to it with Spanish wax. At the other extremity of this little brass tube is a screw, intended to pass into another brass tube, one extremity of which presents a cavity of the same form as the nut of a screw; the other is free, intended for introduction into the interior of the vessels, and provided with a prominent rim. As the slightest inclination in the instrument would cause a variation in the height of the columns of mercury, a leaden wire is adapted to it, to secure it in an accurately vertical position. When we wish to bring the instrument into communication with the blood, we lay bare an artery, seize it between the fingers, taking care first to pass a ligature round it, and make a longitudinal incision beyond the compressed point. The lips of the wound in the vessel are next laid hold of with a forceps, and separated from each other, so as to render the orifice as circular as possible. The tube is then introduced, and the artery tied below the rim of the instrument. The moment we cease to compress the vessels between the fingers, the blood passes from it into the tube, mixes with the subcarbonate of soda, and so transmits the force of its impulsion to the column of mercury.

M. Poiseuille has conferred a material benefit on the science, by devising this instrument for the estimation of the blood's pressure. You will readily fancy the numerous errors to which the observer was exposed, when endeavouring to calculate it by the tension of the walls of the vessels. Suppose we take two tubes, made of caoutchouc, one thin, the other thick; it is evident that if you press them between the fingers, you will receive from each a different sensation. If they are filled with liquid you will find it impossible to estimate the degree of pressure that each supports, by the resistance of their coats alone. It will require greater force to dilate the thick than the thin tube, and you will be exposed to the error of ascribing to the pressure of the liquid what in reality depends on the difference of their structure. The case is exactly the same with arteries as with caoutchouc tubes. It is evident, from the laws of hydrostatics, that the least pressure, acting on the extremity of the horizontal segment of the hæmodynamometer, will be felt through the entire apparatus; the column of mercury will rise in the ascend-

† An accident has prevented us from giving a representation of M. Poiseuille's instrument this week. In our next Number we shall give an accurate drawing, taken from the Thesis of M. Poiseuille.

ing branch to the same extent that it falls in the descending one; and so the total force with which the blood moves in any artery will be represented by the weight of a cylinder of mercury, the base of which is a circle of the same diameter as that of the artery, while its height is equal to the difference between the points at which the two surfaces of the mercury stand. In order to attain still greater precision, we must deduct the pressure of the small column of subcarbonate of soda.

The first important proposition established by this instrument is, that the pressure acting within the arteries of any animal, is the same at every point of the entire system. Take an artery close to the heart, another at some point remote from that organ; the instrument applied to each of these vessels will be affected to exactly the same extent in both cases. M. Poiseuille made the experiment on the carotid, and on a muscular branch of the thigh in a horse. Notwithstanding the enormous difference of the two tubes, in respect of their diameter and distance from the heart, the displacement of the mercury was exactly the same in both instances. This equality of pressure through the entire arterial system is an extremely important fact, in a practical point of view. It shows that, if the practitioner desire to lessen the quantity of fluid in circulation, it is of little consequence what vessel he opens; for the equilibrium of pressure is simultaneously re-established in all the vascular tubes.

So much for the vascular system of the same animal; as there is only one agent of impulsion, there is certainly no apparent reason why the force with which the blood moves in any artery should be different from that by which it is influenced in the others. But if you apply two instruments, one to a horse, the other to a dog, does it not seem extremely probable, *à priori*, that the column of mercury will rise to a different height, under the influence of the arterial pressure in the two animals? Must there not be the same difference between the degrees of pressure of the liquid as exists between the volume and energy of their respective hearts? Such was the very natural supposition of M. Poiseuille, when preparing to perform the experiment on large animals, such as the horse; and he had, in consequence, provided himself with a very long tube, capable of indicating a pressure of several atmospheres. But what was his astonishment when he saw the mercury rise only to the same height as in the case of the dog! He subsequently applied the apparatus to other animals, equally disproportionate in point of size and strength, and invariably with similar results. So that a heart, weighing three or four ounces, transmits the same amount of pressure to the walls of the vessels, as one weighing six or seven pounds. These are, no doubt, most curious facts; still they are comprehensible, for the question of which they involve the answer, is not to calculate the total force of the heart, but the surface of the column of blood displaced. It appears that in very small animals, such as rabbits, guinea-pigs, &c., the mercury rises in the tube to about the same height. There is one circumstance capable of exercising a slight influence on the exactitude of the results of these experiments, which requires to be mentioned. A certain quantity of blood becomes, of necessity, mixed with the subcarbonate of soda, and as this blood is removed from the total mass of fluid set in motion by the heart, the pressure exercised on the arterial coats must be thereby diminished. This trifling loss of blood is a matter of insignificance in large animals, but in small ones it must not be forgottten in our calculations.

Now, that we are acquainted with the method of estimating the pressure of the blood, let us inquire into the circumstances capable of causing variation in it. Here is a caoutchouc tube filled with liquid, though not to such an extent as to distend its walls. Occasionally circumstances occur in the living economy, wherein the arteries, though full of blood, are not dilated; but such are exceptional cases. I inject some more water into the tube; in proportion as the liquid enters, its walls are distended; when I draw the piston back the distension decreases. This is a very simple phenomenon. In the same manner it sometimes happens that the blood contained in the vessels becomes more abundant in quantity than natural, and consequently increases the pressure. It may be reduced by removing a certain quantity of fluid; and this is what you do, without reflecting on it, when you open an artery. Bleeding not only diminishes the pressure in the vessel opened with the lancet, but, at the same time, lessens that supported by the totality of the vascular system. We will now examine this pressure in the living animal. The circumstances that modify it are referrible to two principal causes, the mass of liquid in movement, and the force of impulsion. By augmenting or diminishing either of these mechanical influences, we produce a proportional increase or decrease in the pressure acting within the vessels. We must also take most accurate note of the movement of respiration. The animal, on which our experiment is about to be made, is, you perceive, perfectly quiet; besides, every precaution has been taken to prevent his movement from disturbing the apparatus. Two instruments have been applied; one to the left carotid, the other to the femoral artery of the same side. The mercury stands at the same height in both divisions of the instruments, because the cocks are

closed. I turn them, and immediately the oscillation of the columns commences. You have, without doubt, already remarked that the height of the mercury is less in respiration, greater in expiration, whence we must infer, that the force with which the blood moves in the arteries is diminished during inspiration, augmented during expiration. Observe, too, that every time the animal coughs the column rapidly ascends above its ordinary level. No one has ever thought of placing the action of coughing among the causes capable of accelerating the movement of the blood, and yet the hæmodynamometer shows clearly its great influence on the progression of that fluid. To this accidental cause are to be attributed those sudden elevations of 10, 13, 20, or 30 millimetres; the heart has nothing to do with them. That organ is the constant agent of the circulation; but the respiratory movements exercise so powerful an influence in this way, that during deep expiration the force that moves the arterial blood becomes almost double as great as in the normal state. The struggles of the animal have ceased, and the respiratory movements succeed each other regularly; so that the ascents and descents of the column of mercury appear to oscillate to the same extent above and below a fixed point of the tube; the scale marks 100—110, 80—105 millimetres. The results given by the two instruments correspond exactly. In order to ascertain the precise amount of pressure we have only to take the mean of the extremes furnished by a number of experiments. From the identity of effects on the mercury in both instruments we learn that a molecule of blood moves with the same force in the carotid, as another in the femoral artery. Now that the equality of pressure in the two vessels is indisputably proved, we will apply the instrument to the elucidation of other points. This subject is, indeed, so new, that I am not aware of any person, except M. Poiseuille, having undertaken such inquiries; and yet the simple ascent of the mercury, by the impulse of the blood, resolves a problem, in the attempted solution of which Borelli and Keil vainly exhausted the science of figures and of algebraic calculus. This, by the way, is a new proof of the superiority of the experimental to all other methods of pursuing physiological research. We know that the liquid contained within the vessels cannot increase in quantity without those vessels suffering under augmented pressure. We can, therefore, in all probability, cause at will the elevation or descent of the column of mercury, by adding to, or subtracting from, the circulating fluid, given quantities of liquid. The volume of the latter will be the measure of the variations of pressure.

Now that the animal is again at rest, the column marks 80—105; that is, it oscillates over a space of 25 millimetres, which gives for the two columns 50 millimetres. I will now vary the experiment described this morning. I expose the jugular vein, and apply a ligature to its upper end, to prevent loss of blood. I introduce into the lower end the extremity of this syringe, filled with tepid water; it holds about a quarter of a litre. I push the piston gently, but the mercury remains at 80—100, 85—105 millimetres. Possibly the quantity of fluid injected is too trifling, relatively to the total mass of the blood; I will, therefore, push some more into the jugular. The column has distinctly fallen, and now marks only 35—50, 35—60, 30—45 millimetres; so that, far from causing an elevation of the level of the mercury, it produces a sensible fall. So true is it, Gentlemen, that soberness in conjecture is imperative on the experimentalist, unless he wish to obtain, with few exceptions, results at variance with his announcements. In this instance I was pre-occupied with the influence exercised by the volume of liquid in circulation on the arterial parietes, and forgot, for a moment, the principal agent of impulsion, the left heart. Our injection, it is true, augments the pressure, but the introduction of a notable proportion of water into the blood diminishes the energy of the heart. What we gain in one way is lost in another; and in five the mercury, instead of rising above, actually fell below its previous level. This experiment allows of a new and unexpected inference, namely, that the volume of liquid does not contribute so much as the energy of the heart's contractions to the arterial pressure. If you weaken, in any way, the contractile force of that organ, you will in vain increase the quantity of circulating liquid; the former influence will more than counterbalance the latter, and the mercury will fall, as you have just seen. As the animal is still in a fit condition, I will make a further experiment, by injecting an aqueous infusion of coffee into the jugular, in order to ascertain the action of that liquid on the force of the heart's impulse. It is generally known that coffee is an excitant, and that it increases the activity of the circulation; but as, so far as I am aware, it has never been directly introduced into the veins, I am curious to see its effects on arterial pressure. In theory it should accelerate the ventricular contractions, but I cannot say it will at the same time increase their energy. Of this we shall judge; the experiment, however, will not prove as conclusive as it might be, as the circulating fluid has already been diluted with water, which will render the presence of a new liquid less sensible. The scale still marks 30—45 millimetres; the slight elevations you observe from time to time, depend on the struggles of the animal. I now inject about two drachms of coffee into the jugular. You

perceive that the respiration is already accelerated; the pulse is more frequent and stronger than before, and there is a state of general excitement. The mercury oscillates between 45—50, 40—50, 50—65, 70—75, 85—90, 60—90 millimetres. A notable rise has, therefore, taken place; the column now stands at 70—105 millimetres. I have no doubt but that the ascent would have been much more considerable had we made the experiment before the injection of the water. To complete our experiment, and render its results more applicable to the human subject, I will add a small quantity of brandy.* I must first mix it with half its volume of water; for, in the pure state, it would coagulate the blood and stop the circulation. Possibly this precaution is superfluous, for, as I had the cup of coffee and glass of brandy from an adjoining café, it is not impossible that before the latter reached us, it had already undergone the process of dilution. I fill this little syringe, which scarcely holds a drachm. The injection is now performed, yet I do not observe any marked difference in the level of the mercury. The column, which was at 60—95, varies now between 75—80, 70—80, 65—90 millimetres. I repeat the injection of an equal quantity of brandy; but the result is still insignificant. The alcoholic liquid has not, therefore, the same influence on the circulation as coffee; it would even appear that the mercury has fallen a few degrees. But these experiments need to be repeated before they acquire real scientific value. No conclusion can be drawn from a single observation, more especially when its results are not accurately defined, and when the subject to which they refer is then for the first time investigated. I will now bleed the animal, for the purpose both of relieving the disturbance we have produced in its functions, and of seeing what effects the removal of blood will entail in the arterial pressure. I open the jugular: very little blood flows, which is easily accounted for by the presence of the instrument in the corresponding artery. As the circulation is intercepted in the latter vessel, the vein receives no more blood. Besides, I tied the carotid on the other side a month ago. The same obstacle exists in the femoral artery; nevertheless I will open its attendant vein, for, from its large size, it will no doubt furnish more blood, and we shall not be obliged to make the dog undergo an additional operation. I prick it now with the point of a bistoury; the blood escapes but slowly, and in small quantity. The column, which stood at 75—90, now marks 75—85, 75—80, 70—85, 65—80 millimetres. The fall in the mercury is, therefore, very trifling: this, no doubt, depends on the flow of blood not being rapid enough to cause a momentary interruption of the equilibrium of pressure in the circulating system.

The general theorem established by M. Poiseuille is this:—*The total static force which moves the blood in an artery, is exactly in the direct ratio of the area of the circle of that artery, or in the direct ratio of the square of its diameter, no matter what be its position in the economy.* You perceive how we should proceed to ascertain the force of any given vessel, the aorta for example. All we should have to do would be to take the square of its diameter, which would give the surface of the circle; multiplying by the mass of the column of mercury, the base of which is represented by the surface of the circle, we should ascertain with mathematical precision the force of the left ventricle. It would, of course, be also necessary to take into account the variations caused by the movements of respiration, by the struggles of the animal, by the volume of the fluid in circulation, and by the activity of the heart's contractions; for all of these modify the impulsion of the column of blood. An attentive examination of the pulse shows that that impulsion is not always of identical force.

In spite of the great information furnished by the hæmodynamometer, there are still several points in animal hydraulics which must, in the present condition of our resources, remain in obscurity. The velocity with which the blood moves has not yet been accurately determined; we are obliged to content ourselves with approximations. There is an instrument used for measuring the rapidity of the current of rivers, called *hasta reometrica*, by means of which the velocity of the stream may be calculated. This instrument is a sort of funnel, the wide extremity of which is turned towards the current, so as to let the water rush into it. A tube fitted to its narrow end marks the degree of ascent of the liquid, and furnishes the means of calculating the rapidity of its course. The column rises to a different height when the instrument is kept at the surface or at the bottom of the river; so that the different strata of fluid do not flow with the same velocity. It were much to be wished that we had some means of estimating the degree of rapidity of movement through the numerous divisions of the circulating system; more especially as we should then be enabled to allot to both the pressure and the velocity of the liquid, the influence that respectively belongs to them. You are aware that the pressure and velocity are not always exactly proportionate. The interest of these questions is not merely scientific; a number of useful precepts, bearing on the practice of medicine and surgery may be derived from them. When, for instance, you tie an artery, the pressure you thereby remove from one point of the system, is distributed through its entire extent. The vas-

* M. Magendie alludes to the very general habit of his countrymen of taking a small quantity of brandy either with or after their coffee.—Rep. L.

cular apparatus forms a chain, of which all the links are, in this respect, reciprocally vicarious. Thus, when you interrupt the circulation in the chief trunk of the lower extremity for the cure of popliteal aneurysm, the skin almost immediately acquires a burning heat, the face becomes injected, the pulse beats with force, the patient complains of flushes of heat; in short, all the signs of superactivity of the circulation ensue. This train of symptoms cannot be ascribed to the simple fact of a painful operation having been undergone: undoubtedly the wound has something to do with it, but the chief source of the fever is to be found in the modification of the hydronamic phenomena of the circulation. The force brought into play by the contraction of the left ventricle struggles in vain against the resistance of the ligature; but that force is not uselessly expended, it is divided into as many partial forms as there are sanguineous tubes, and increases the energy of the pressure in every part of the arterial system. Hence the fulness of the pulse; hence the pulsations of which the patient is conscious; and which surgeons, who are generally more dexterous as operators, than able as physiologists, have been so embarrassed to explain. There are a number of cases wherein the circle of the circulation is contracted. When you amputate a leg or thigh, you diminish, by a fourth or a third, the extent of that circle; the pressure is, in consequence, increased as the tubes on which it acts are diminished in number. These mechanical notions will find their application in the precautions which it is expedient to take before and after operations of this nature. They prove that it is wise to disgorge the vessels artificially of some of their contents, in order to obviate the effects of the sudden augmentation of internal pressure. Under such circumstances bloodletting may be of great service; managed with intelligence and discretion it becomes a powerful auxiliary in therapeutics.

I will now show you that by diminishing the extent of surface over which the blood flows we increase its force of progression. This I affirm boldly, for the experiment has already been made by M. Poiseuille. When I only hazard a conjecture, my tone will not be so firm. You have often heard me denounce the pretensions of those men who aim at anticipating the results of experiments. Trust me, Gentlemen, I will endeavour to join the example to the precept. I have now introduced the point of the instrument into the left carotid. The cock is closed, so that both columns remain stationary and on the same level. Now that the animal is tranquil, we will allow the blood to communicate with the interior of the tube. You perceive the ascending and descending movements of the mercury; the extreme degrees answer to forcible efforts of respiration. It is difficult to separate, even mentally, what belongs to each of the powers that concur in producing the arterial pressure. The volume of the liquid, the action of the heart, and that of the lungs, are so many mechanical agencies, whereof the several influences coalesce and are confounded together; according as one or other predominates, the height of the column undergoes notable variations. In the normal state respiration appears to exercise the chief influence, to such a degree that during very deep inspiration the force that moves the blood seems to be rendered almost null: in compensation it is nearly doubled in the corresponding expiration.—The scale marks 60—90 millimetres; if we exercised pressure on the opposite artery it is possible the column would rise to a greater height. However this difference, if it exist, will not be very considerable; for, as the pressure is divided among all the arterial tubes, it can only be slightly marked in any single one. I now lay bare the right carotid, and surround it with a ligature which I can tighten or loosen at will. We shall, in this manner, be enabled to judge of the influence exercised on the total static force of the blood, by the interruption of its course in a point of the vascular system. I now tighten the ligature: the column oscillates between 75—100, 75—105 millimetres. I loosen the ligature: it falls to 75—95, 70—90 millimetres. I again tighten it: the mercury rises forthwith to 85—105, 80—105 millimetres. I now remove it, and the column descends to 75—90, 75—85 millimetres. Hence it is evident that the degree of pressure differs according as the right carotid is or is not permeable to the blood. The phenomenon would be still more marked, if the experiment were made on a larger vessel, such as the aorta. I shall not open the abdomen for the purpose of applying a ligature to that vessel; such an operation would so seriously affect the animal that no accurate conclusion could be arrived at. There is a more simple way of proceeding; one which has been successfully adopted in the uterine hæmorrhage of parturient women; I mean compression of the aorta through the abdominal parietes. Accordingly I press in the direction of the course of the vessel, and am now certain that the passage of blood through it is interrupted, for no pulsation is to be felt in the femoral arteries. The tube marks 90—115, 95—120, 95—115, 100—120 millimetres. I cease to make any pressure, and the mercury falls at once to 80—100 millimetres. I felt convinced, indeed, from the result of the preceding experiment, that when the force moving the blood in the aorta is suddenly transmitted to one-half the arterial system, the pressure in that half must be notably increased. These are phenomena of which we have both the experimental and theoretical certainty.

As I am anxious to investigate thoroughly the effects of the introduction of water into the circulation, I will once again vary the experiments already made. When I injected by the jugular vein, the liquid was obliged to pass through the right side of the heart, the lung, and the left side of the heart, before reaching the aorta. This rather circuitous route prevented us from ascertaining the direct effects of the injection. As the water had touched the fibres of the heart and diminished their contractile force, before mingling with the mass of the blood, it acted first as a debilitant; consequently the trifling increase in the volume of the liquid was insufficient to compensate for the loss of energy of the impelling agent. Instead of injecting by the veins I will now inject by the artery, and push the liquid against the normal course of the blood. The experiment is simple: I surround the right carotid with two ligatures,—one intended to tie the upper end of the vessel, the other to secure the lower end to the tube of the syringe. The injected fluid cannot reach the capillary divisions of the artery, because I shall drive it in a contrary direction; nor will it reach the interior of the left ventricle on account of the resistance of the sigmoid valves. It must, then, of necessity, mix with the blood of the artery, and be, with it, distributed through the general mass of vascular ramifications. The upper end of the carotid is now tied. Before puncturing the vessel I will press the lower end, so as to remove the blood in a portion of the cylinder from the influence of the heart. The incision is now made: the scale marks 80—100 millimetres. Now, watch carefully the variations in the height of the mercury, while I gently push the piston. If I pushed it abruptly or forcibly, we might ascribe to the action of the liquid *per se*, what, in reality, depended on the progressive movement I gave it. The syringe is now half empty, and the scale marks 100—115, 90—105, 100—125 millimetres. The moment I cease to press on the piston, you see that it rises from the pressure of the blood; each jerk of the piston corresponds to an arterial pulsation. The syringe is now almost wholly filled with blood mixed with water, which accounts for the fall of the mercury to 75—90 millimetres. I push the piston again, and the column rises to 90—105 millimetres. I draw it back, and the scale marks 55—75, 60—70 millimetres. I reintroduce the blood, and we find the mercury at 75—85 millimetres. It is plain, therefore, that the pressure increases or diminishes in the direct ratio of the quantity of liquid. You remark that the elevation of the column of mercury is much less sensible at the close than at the commencement of the experiment. M. Poiseuille very judiciously observes, on this, that a certain quantity of water has now returned by the veins to the heart, and consequently weakened its force of contraction. However trifling the quantity of liquid may be, it must unquestionably diminish the energy of the muscular fibre. I now tie the artery through which I drove the injection. If I had not introduced a debilitating fluid into the circulation, I have no doubt that the mercury would now have risen about its normal level in consequence of my having tied the right carotid. The extent of the circulation being lessened, an increase of pressure within the vessels would necessarily follow. The diminished force of contractility of the heart can alone explain the weakened pressure of the blood, in the present instance.

It would be a very interesting subject for inquiry to determine with the hæmodynamometer, the action of the principal medicines employed in practice. Among the substances whose action on the heart is most firmly established, certainly ranks digitalis. When taken in certain doses it diminishes the frequency of the contractions of the ventricles to such an extent that I have known the pulse of some patients to fall, under its influence, to 12 or 15 in a minute. I do not believe its effects have ever been studied with the desirable degree of precision. I will inject a small quantity of tincture of digitalis into the jugular vein of this dog. In all probability the heart's pulsations will fall below their normal rhythm; at least in theory such a result may be anticipated. I must first ascertain the existing number of arterial pulsations: they are, I find, about 120 in a minute. The mercury oscillates between 70—95 millimetres; it has almost returned to its original level. I now incise the integuments in the direction of the jugular vein, so as to expose that vessel. You see that it is small, collapsed, and scarcely apparent. This is easily accounted for by the presence of ligatures on both carotids. As the blood is no longer carried to the head by those arteries, it cannot return to the heart by the corresponding veins. As the circulation is interrupted in the jugular, I should have foreseen that it is unfit to receive the injection; I shall, therefore, introduce it by another route. All membranes not covered with epidermis, absorb; we could, therefore, cause the liquid to enter the circulation by placing it in the abdominal cavity. In the dog the tunica vaginalis communicates with the peritoneum: this explains to you my object in dividing, as I now do, the skin of the scrotum, and introducing the point of this Anel's syringe. I inject about a drachm of the tincture of digitalis. We must now wait a few moments, for the liquid must be absorbed before it can manifest its effects. The pulse is already less frequent, it is now 90 in a minute. The mercury stands at 70—90 70—95 millimetres. So that the diminished frequency of the heart's pulsation is unat-

tended with either increase or decrease of the pressure. The pulse is now 84; the mercury oscillates between 75—100 and 70—90 millimetres. The action of the digitalis is manifest, for the arterial pulsations have fallen from 120 to 84. Possibly its effects would have been still more marked, if we had brought the liquid into contact with a membrane endowed with stronger powers of absorption. I inject half a drachm into the pleura. Unfortunately the animal begins to grow wearied by our experiments; its struggles disturb the circulation and render it impossible to appreciate accurately the action of the drug. The pulse now beats 100 in the minute. We cannot infer anything very important from this experiment. Its most remarkable feature was the diminished frequency of the beats of the heart unaccompanied by any variation in the arterial pressure.

In enumerating the most apparent causes of the static force of the blood, I did not include a faculty of spontaneous movement without the influence of any mechanical agency, which has been ascribed to that liquid. I regard the notion as an absurdity, fitted at best only to excite a smile. When extracted from its vessels the blood has no other vital or physical force than the force of inertia. It is like any other body composed of inert molecules,—in order to produce a movement in it there must be an external agent of impulsion. Enclose some blood in a knot of chicken's intestine, or in a caoutchouc tube, and you will find that not the slightest spontaneous displacement will ever occur. In truth, Gentlemen, it requires to have lost one's eyes to maintain that the blood has a motor power inherent in its nature. Such an idea is a mere hallucination.

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## ST. GEORGE'S HOSPITAL.

## CLINICAL REMARKS

BY

### DR. SEYMOUR.

Spotted Fever.—A peculiar species of fever has been very prevalent of late in London, accompanied with peculiar petechial spots, which have been supposed by some physicians to indicate a putrid state of the blood, but let me assure you that this is all nonsense. In warm climates you meet with a certain form of fever in which this peculiar eruption indicates great constitutional danger, and then it obtains the name of *cibices*. In these cases the patient generally bears pressure over the abdomen well, indicative of no organic derangement in that cavity. In some patients there is much precordial pain, almost resembling incipient pleuritic inflammation; but there is, in truth, no organic derangement whatever, the bodily distress arising, I believe, from the inhalation of some poison which affects the nervous centres and their ramifications. The pathology of such cases reveals no organic alteration of parts whatever. Andral's division of the febrile states of the body is the most correct and philosophic of any yet established. He speaks of one form in which, like the present, the nervous system is most particularly affected; of another in which there is evidence of structural derangement of parts; and of a third, in which the symptoms arise from the inhalation of poisonous matter. The most judicious treatment in these cases is that of giving ammoniated stimulants.

Apoplexy.—A woman has been brought in since I last met you, who, as the phrase goes, had been "struck" by apoplexy. With reference to this case let me tell you that, as life advances, the substance of the left ventricle becomes thicker, and the vessels circulating blood through the brain weaker. From the age of thirty years and upwards, the coats of the arteries become softer in texture, or degenerate, and become plated with ossific deposits. Now such a change of organic structure may take place in the falx cerebri, and is nearly of the same character of degeneration as that which attends tuberculous depositions in the lungs or chalky concretions in the joints. These ossific deposits are occasionally met with in the aorta and radial artery. I once witnessed a post-mortem examination in which the trunk of the radial artery had degenerated into an ossified tube, and numerous plates of bone were deposited over the canal of the aorta. The patient was only 35 years of age. The carotid and basilar arteries, and the trunks forming the circle of Willis, may also, in this way, become changed in structure; and if, after any sudden emotion or anger, a patient suddenly drops down dead, you may generally prognosticate that this state of the arterial system will be found; and if you are disposed to become pathological prophets, you may pretty surely announce, in most of these cases, that a coagulum of blood will be found near the corpus striatum, as the ruptured vessel, in six cases out of seven, generally breaks there. If you hear of a person dropping down dead suddenly, you may rely upon it that the heart, or some of the larger vessels has given way; but if some time elapses between "the stroke," as it is termed, and death, then you will generally meet, after death, with an apoplectic state of the brain.

Bilious Fever.—A man up-stairs has a derangement of the biliary secretion for which he has been freely purged. He has also been troubled with severe headach, for which I ordered him leeches, which gave him manifest relief. I draw your attention to the case to tell you that although these leeches were applied no inflammation of the

brain was present. The headach was only a secondary affection, caused by sympathy between the brain and alimentary canal.

Disease of the Heart.—A woman has been admitted with an interesting series of diseased symptoms. She has had violent palpitation of the heart, she says, for nine years, but the carotid and radial pulses beat very feebly in comparison with the movement of the central circulation. She is unable to lie down, her legs and feet are slightly œdematous, and she has had occasional bleeding at the nose. Now, these symptoms seem to indicate either thickening of the valves of the heart or dilatation of the aortal trunk. The carotid pulse is weak, whilst the aortal pulse in the abdomen is very strong, and if there were thickening of the muscular coats of the ventricles, with dilatation of their cavities, there would be dropsy of the abdomen, which there is not. She has had some discharge of blood from the nose and mouth from the heart not circulating the blood freely through the semilunar valves, and the blood being consequently thrown back upon the lungs, the congestion of which has been thus relieved. In order to assist this salutary indication of Nature, she was bled and purged, and put upon nitre, to relieve the system through the kidneys. The blood drawn was neither buffed nor cupped. She experienced the greatest relief from its loss, and has since been able to assume the recumbent position, which she had not done for some time previously, owing to the engorged state of the lungs. The difficulty of lying down when fluid is effused into the chest depends much upon whether that fluid be generally diffused over the pulmonary cavities, or contained in one part of the chest only. If inflammation of the pleura exist and a band of lymph be formed, converting it in one part of the chest into a close sac, and fluid be effused into that closed portion, the patient may lie down without difficulty owing to the confined fluid being unable to gravitate upwards. But with reference to this case, I believe that there is dilated heart, and dilated aorta, possibly aneurysm, either true or false. The prognosis is that this woman will die suddenly; and in private practice, where you meet with such cases it is always well to let the friends know your opinion, or they, finding the patient improve, for a time, under appropriate remedies, may begin to congratulate themselves upon a speedy recovery, when, some day, to their horror, the patient suddenly dies. Then there is a great outcry raised that they knew nothing of what was coming, and that you gave them no intimation of it. I have known such things occur. But you should not study pathology or morbid anatomy solely that you may tell what the appearances after death will be, but observe it in connection with the symptoms, or else all your ideas on the subject will resolve themselves into a *sepulchretum* of flesh, blood, and bones, and the only credit you will get for your copious notes will be the fame of possessing bundles of records of dirty diseased appearances, and a mind full of stinking subjects. The treatment in this case has been limited to the use of diuretics, such as a combination of cantharides, digitalis, and the liquor hydrargyri oxymuriatis, which will throw off water from the kidneys, and relieve the oppression of the pulse, the difficulty of breathing, and the violent action of the heart.

Dysentery.—On the day that I last took in, a woman made a terrible disturbance in the room, wrapped up in blankets to her neck, and stated to be dreadfully ill. As frequently happens with such noisy persons, there was really very little the matter with her. She was labouring under mild dysentery. Dysentery is inflammation of the lining membrane of the great intestine; there is a violent desire to go to stool, but at first nothing passes. After much straining some mucus, like the white of an egg, comes away, mingled with scybalæ, much like the fæcal matter of sheep in the meadows. Purging will get rid of the cause, and after one or two doses the patient will, perhaps, have a hot skin, and a sharp attack of fever, for which, if necessary, bleeding must be employed. So long as there is any blood in the stools, or weight in the belly, or tenesmus, so long must you purge well with calomel and castor oil. If the operation of the medicines cause much pain, opiate glysters should be administered. Such sporadic dysentery as this is nothing compared with the epidemic dysentery in Africa. I have never been there to see it, but whilst I was in the hospital ship in the river, we had many chronic cases in which, after death, the mucous membranes of the great intestines were found hanging down in loose rough shreds, as though rats had been gnawing at them. In sporadic cases you have pain on pressure over the entire intestinal circuit of the colon, and you will sometimes find the sacral nerves sympathise with this. One of the most severe cases of dysentery I ever attended occurred to an undertaker in High-street, Marylebone, who had such great pain, referred to the sacro-iliac synchondrosis, that I began to suspect some disease there, but was soon undeceived. This man, after attending to a good rich funeral, had a regular jollification, and no doubt got very drunk, to relieve which he took a dose of what the coffin-making craft call "jalap and gin," which rides pretty roughly through the bowels, and from the severe action of this remedy the dysentery was induced. As to the woman in the house she is much better. Indeed there never was much the matter with her. The truth is, Gentlemen, that "we were strangers, and she took us in."

Affection of the Throat.—We have admitted a girl complaining of very severe sore throat, for which she says she has been bled, leeched, purged, and blistered, and is no better. She pretends that she cannot open her jaws, and when made to do so I could detect nothing beyond simple inflammation of the uvula and fauces; but frequently in these cases, where nothing can be seen, there is something irritating the pharynx, to relieve which, and to open her jaws a little wider, she had a good smart emetic, which brought away a large quantity of mucus and bile, and she got better. This case proves that sometimes the very simplest remedies will succeed where a host of others have been tried in vain.

Hæmatemesis.—This disease occurs in a young girl up-stairs, at the period of menstruation. With respect to discharges of blood from the throat, bear in mind that when blood is coughed up it is generally symptomatic of disease of the heart or lungs, but when vomited, in six cases out of seven, it is of no importance. In these latter cases a great deal of blood is swallowed, and passes per anum, in a dark state, and the patient's friends are much alarmed without cause. I remember a patient vomiting blood from an ulcer in the stomach, near the coronary artery, but the bleeding was stopped and the ulcer healed. But this young woman vomits blood when she ought to menstruate; this, therefors, is a case of "vicarious menstruation." In vomiting of blood, in men, the spirit of turpentine is a valuable remedy. I do not pretend to say how it acts, but it is of the greatest service. I gave it in this case, and it caused severe strangury, and I ordered her assafœtida instead, as she was very nervous.

Herpes Zoster.—A case is now under my care of herpes, commonly called "shingles." You should know this disease, for if you mistook it for another you might suffer much discredit. Herpes is a vesicular disease, as small-pox is a pustular. There are three species,—herpes zoster, labialis, and phlyctinodes. The first shows itself in small white vesicles, surrounded by a blush of inflammation. Sometimes it appears in patches, and sometimes it spreads like a zone around the body; hence the term *zoster*. It attacks old and young. With the former it runs twelve or fourteen days, and sometimes leaves very nasty sores when the scabs fall off. Here are two plates of it; one is Alibert's, very beautifully representing the appearances. The other is Rayer's, which it is the fashion to applaud, but I do not consider it to be so faithful. You will notice in Alibert's plates some deep gashes in the diseased surface. These are frequently the source of severe pain, as though knives were running into the parts. I remember meeting the late Dr. Babington, who was attending two patients with this disease, and he told me that, from their sufferings, he had great difficulty in preventing them from beating themselves to pieces. This was a strong term, but I have no doubt of its correctness.

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## MR. JOHN HUNTER ON THE CURE OF HYDROCELE.

The following observations of John Hunter, on the cure of hydrocele, which are now published for the first time, were addressed to the Count de Bruhl, who was Ambassador to this country from the court of Saxony, towards the close of the last century.—Although the document bears no date, we have reason to think that it was written about the year 1773, for the information of the German surgeons, on the application of the Saxon Ambassador. We have not thought it necessary to alter the orthography of Mr. Hunter, which is often inaccurate, being desirous of presenting the paper in its original state to our readers:—

Mr. Hunter's compliments to count Bruhl. He has drawn out a short sketch of the different cures for the Hydrocile, which he hopes will be perfectly understood by the Surgeons in Germany.

Leicester Sq. Saturday Evening.

An Hydrocile is perhaps one of the most inocent diseases that ever afflict a human body; or more properly speaking, is an effect of one of the most inocent causes. It is productive of no evil; it can only be an inconvenience, and that inconvenience can only arise from sise.

There is a relief call'd the paliative cure, which cannot be call'd a cure, only a temporary relief, as it commonly recurs again; this is simply letting the water out; for the sack which contains the water is the same as before.

To perform a cure, would be to hinder the accumulation of the water, but as we are not in possession of such powers we are obliged to have recourse to the next best method, which is an obliteration of the sack which contained the water. To effect this, more methods probably have been proposed and put into practice than in any other disease in Surgery. There are two ways in which this effect may be produced; one, and the most simple, is to produce such inflammation on the sack as will make the sides of the sack adhere to each other, and if this adhesion is complete, then no hydrocile can ever take place in this part afterwards. Another mode is to expose the sack in such manner, as to bring on suppuration; this is a more severe method than the above, because the inflammation must

exceed the adhering stage, and it is more tedious because suppuration must go on till the whole sack is consolidated by granulation.

To produce the first method, it was proposed by the first Monro of Edinburgh, to make a puncture with a Trochar into the bag of water and let it out, then to inject by the same Trochar some wine to excite inflammation, and to let this wine out, then inflammation commences and the sides of the sack adheres; If it was certain that this effect would always be produced, and that every part of the surface of the sack and Testicle would adhere, then no more is necessary, but I am told, that these adhesions are not always perfect, which subjects the person to a relapse, and which has taken place, and it is probable that this was the reason of its being laid upside. Mr. Earl has again taken it up, and from his account, it would appear to succeed as well as we would wish, but I have been informed that it does not always succeed; and that there are cases, where from experience it does not, which I can easily conceive.

To produce adhesions of the sack by means of suppuration and granulation four methods have been recommended; one, the most simple in the operation, was to make a small opening and let out the water, then into this opening put a tent, or a little lint; this excited inflammation over the whole sack, and the whole sack suppurated, and the whole was obliterated. To produce the same effect, one recommended a caustic to be apply'd, about the size of a sixpence, and either to cut through the eschar or let it slough off. Another method was to pass through the sack a seaton, which was an old practice revived by Mr. Pott; and the fourth was to open the sack from one end to the other, which is the most severe operation of the whole.

Every one of these modes produced the same effect; and the same quantity of inflammation, suppuration &c succeeded; the only difference was in the operation itself; but none of these four methods were at all times perfect, the disease recurred again in some of all of them. An accident hapen'd to a patient of mine at St Georges Hospital, which give me an oportunity of finding out the cause of those relaps's, which was, that the sack had not wholy inflamed and supurated; therefore to effect an universal suppuration over the whole surface of the sack, I have taken care that no two parts of the sack shall come into contact till it has suppurated; and to effect this, I put into the opening made into the sack (which is about two inchs long) some flower, which I spread all over the inside with my finger, and then a little lint on the cut edges of the wound, and a poultic over the whole. Then alow suppuration to take place, and the whole heals. If this flour is well introduced through the whole sack, every part must suppurate, and every part must unite, which makes the complete cure.

In whatever way the cure is effected, there is no danger.

To Count Bruhl, Dover-street.

## ETIOLOGY AND TREATMENT OF AMAUROTIC DISEASES.

*To the Editor of* THE LANCET.

SIR:—If the following observations tend to settle certain long-disputed, but vitally important questions, on the etiology and treatment of amaurotic affections, they are at your service for publication in your valuable Journal. I am, Sir, your obedient servant,

CHAS. EDWARDS, A.B., T.C.D.,
M.R.C.S.L.
88, Winchombe-street, Cheltenham,
Oct. 20, 1838.

It has been stated by Beer (Lehre von den Augenk., b. 2, p. 456), that imperfect amaurosis is seldom caused by disorder of the gastric organs, except in the case of worms. Richter, however, in classifying the remote causes of this affection, makes one subdivision to consist of irritations, most of which lie in the abdominal viscera; thence sympathetically acting on the eye. The same opinion is entertained by Smucker and Scarpa, and the accuracy of it shall be manifest from the sequel.

Another class of causes are supposed to produce debility and atony of the nervous structure of the eye, by debilitating the system generally, as diarrhœa, cholera, hæmorrhage, salivation, &c.

These constitute the second class of Richter, but Mr. Lawrence has never seen amaurosis produced by such causes. He considers it, in its most frequent and important forms, to be the result of inflammation, in the extended sense of the term, and treats it accordingly.

Here, then, the etiology of amaurosis assumes a very important aspect, inasmuch as the reference of certain cases to debility, if unfounded, might lead to a melancholy neglect of the antiphlogistic treatment, or, if true, might involve the abuse of this treatment.

Again, when amaurosis arises from gastric disorder, the emetic practice is strongly inculcated by Smucker, Richter, and Scarpa; whilst, on the contrary, Beer vehemently protests against it, affirming, as the frequent result, the sudden conversion into blindness of prior sympathetic amaurotic weakness of vision.

Now, passing by many cases of amaurosis in different persons, which have come under my observation, I shall, for the present, confine myself to the more satisfactory detail of

certain varieties in the character of symptoms, and the result of different treatment, in successive attacks, in the same patient. The peculiarities of each attack are highly interesting, and a due consideration of them may suffice to remove the above-mentioned difficulties and disputes.

Case.—A gentleman under my care, of *feeble* habit, is subject to occasional attacks of obstinate constipation, each accompanied by amblyopia, sometimes proceeding to complete amaurosis. When first called to visit this patient I found him completely amaurotic. He had some time before complained of excruciating headach, and every solid or fluid medicine directed by his medical attendant had been rejected by his stomach. *Complete* amaurosis succeeded previous amblyopia during the vomiting, which we shall call spontaneous, in contradistinction to that produced by an emetic in another attack. The patient now became delirious; leeches were applied to the abdomen, and the bowels were relieved by enemas; by these means, and the application of cold to the head, the patient fully and speedily regained his sight and faculties. In this attack the coexistence of headach and delirium, and the recovery by antiphlogistic treatment, sufficiently indicate the existence of active local congestion, or incipient inflammation in the nervous structure of the eyes. This was coincident with great debility, and the amaurosis *was not completed till vomiting occurred.*

After an interval of six weeks another attack of visceral obstruction succeeded—the accompanying amaurosis was incomplete—VOMITING WAS ABSENT. The amaurotic affection lingered for a considerable time, surviving the removal by enemas, &c. of the primary irritant longer than in the preceding attack, in which the vascular congestion was almost purely sympathetic and temporary, but which evidently, in the present instance, approximated more to the organic character.

By some errors in regimen, the patient in a few weeks again relapsed. There were constipation, tense hypochondria, nausea, headach, and amblyopia. I now tried the continental practice. The result of the emetic was a discharge of much yellow-greenish matter, but the amaurosis immediately became complete. The bowels were relieved by enemas, but still the blindness continued much longer than in any previous attack, and was at length and with difficulty removed by the application of many leeches to the temples, and continued evaporating lotions to the head.

In each of these attacks the degree of amaurosis was determined by the presence or absence of vomiting, the complete being synchronous with spontaneous vomiting, as in the first attack, and with the action of an emetic, as in the last; where there was no emetic action, as in the second attack, the amaurosis was incomplete. In many other affections the direct result of vomiting is obvious; we may just mention its tendency, when being obstinate, to cause amblyopia, or even complete amaurosis, in incipient pregnancy. How contra-indicated, then, must the emetic practice be in amaurotic affections! I am fully convinced, with Beer, that there is no more direct method of blinding the patient.

The character of the amaurosis in each attack above-mentioned, all being truly symptomatic with gastric disorder, yet seemed to verge also into the truly, although *secondarily organic*; that is, to assume a mixed character, being both local or organic and sympathetic,—the *perfectly complicated* amaurosis of Beer. The organic part of this mixed character will appear, from the longer duration of the amaurosis in each successive attack, and the increased necessity of local measures, which were longest indicated in the last attack, although coincident with the greatest general debility.

It also appears that the organic degeneracy thus established, may not be proportionate to the completeness of the affection, which, as in the first attack, may be effected by a temporary congestion from vomiting, but when recurring, although incomplete, as in the second attack, where vomiting was absent, may yet have gained more of the mixed character, thus requiring a stricter exhibition of local antiphlogistic treatment. Having thus endeavoured to explain the true nature of the amaurosis accompanying gastric disorders, which I believe to be seldom *purely* sympathetic, but to degenerate into a mixed character; also, having shown the tendency of emesis, whether natural or induced, to be truly perilous, it remains for me to account for the apparent success of the continental practice; to discuss the question of debility, and to bring forward some peculiarities of treatment, adapted to certain forms of amaurosis, and derived from careful observation and experiment.

The amaurosis in typhus, in cases of protracted suckling, &c. is supposed to establish Richter's second class of cases, as arising *directly* from debility.

Now, here I must particularly observe, that with such general debility active local congestions may coexist, as in the case before cited. Adopting this view, I have treated many such cases by local derivatives, *c. g.*, leeches to the temples and blisters behind the ears, conjointly with the administration of general tonics. These remedies, united with means respectively adapted to the removal of the primary irritant, have proved so extremely successful, that I consider the principle established by the result of the practice.

It is further confirmed, by pathological

experiment on the independent nature of the cerebral vessels; animals have been bled to death, yet cerebral congestions have survived the general loss of blood. It is possible that the cerebrum might thus be even further oppressed. In this *indirect* manner may debility, indeed, be said to cause amaurosis, yet it is by inducing or augmenting local congestion.

In the same manner the amaurosis with hæmorrhage, protracted suckling, &c. is explicable,—in typhus the congestion is evident.

The natural tendency of suppressed evacuations is also to produce congestions elsewhere. In this way would I explain the amaurotic affections with suspension of wonted discharges, *e. g.* of the secretion of milk; the bleeding of hæmorrhoids; also from the healing of old ulcers, and retention of the catamenia, congestion of the optic apparatus being thus occasioned.

In all cases of symptomatic amaurosis the following indicationsare, therefore, obvious, namely, to treat these congestions by local derivatives, combined, in the phlogistic diathesis, with venesection, purgatives, and the preparations of mercury; but in cases with debility, with the seasonable administration of general tonics; in each case after the removal of the primary irritant by appropriate evacuants.

This local antiphlogistic treatment, thus advised in *all* cases, with or without debility, may be employed when it is too late. The issue of repeated neglect of the congestive stage may be that of disorganisation, or paralysis of the nervous structure of vision. Here we may try collyria, with strychnine, or frictions, with the same behind the ears; but the stage of paralysis being arrived, I fully agree with Mr. Travers, that the disease will be aggravated by the loss of blood, topical or general.

In cases with debility, I fear that the use of tonics has been unjustly suspected by Beer, who adduces, as the effect of the calamus aromaticus, when there is a tendency to pectoral complaints,—of bark, in costive habits, and of steel, when combined with narcotics, &c., an increased determination of blood to the eyes, thus quickly aggravating the amaurosis.

Had there been previously a due regulation of the digestive functions, and, at the same time, topical abstraction of blood, I believe in no instance would tonics be found to injure in feeble habits; but, on the contrary, I have found the greatest possible advantage thence derived. It will be noticed, that in speaking of topical applications throughout this paper, I mean those applied near to the eye.

It is not my intention at present to enter into those cases of amaurosis not originating sympathetically, but being primarily organic; *e. g.* from medullary fungus, morbid changes in the thalami, optic nerves, retina, exostosis at the basis cranii, or that depending on disease of the fifth pair, as shown by Magendie. These are, for the most part, incurable; it now only remains for me to account for the supposed success of the continental practice—emetics.

The cases must have been merely recent symptomatic congestions, such as frequently arise purely from a loaded stomach. Here emetics may succeed, but yet only as evacuants of the primary irritant. However, from the case recorded above, it will appear that the amaurotic affection frequently survives the removal of the remote irritant by evacuants, whether emetics, enemas, or both, although removeable thereby when the affection is purely sympathetic. But the tendency to degenerate into secondarily organic disease being established, and in these mixed cases the best evacuant addressed to the primary irritation being insufficient, when we consider conjointly with this fact, the peculiarity appended to the evacuant power of an emetic, that of aggravating the now secondarily organic affection by further congestion, it will be evident that we should aspire to procure an ultimate good at less expense. A balance of advantage can only possibly result in such cases as are assuredly and purely sympathetic, originating in a foul condition of the stomach. Even in such I fully accord with Mr. Travers, that the exhibition of blue-pill, saline aperients, and mild tonics, will produce greater ultimate benefit.

In some cases Beer has known amaurotic blindness to have been cured by an accidental blow, or fall upon the head, probably removing the pressure of a cataract from the retina, yet who would gravely recommend the infliction of such injuries to remove amaurosis. Apply this reasoning to the occasional success of emetics in some purely sympathetic cases, though of directly injurious tendency, and producing an evil accidentally temporary. Who, then, will venture to prescribe them in amaurotic relapses, from whatever cause, which I have shown regularly to degenerate into a mixed character? The proceeding will be truly perilous in proportion to the quantum of the organic or truly local character, in the mixed affection.

## EFFECTS OF A LEECH IN THE INTESTINAL CANAL.

*To the Editor of* THE LANCET.

SIR:—If you consider the following curious case worthy of a place in your Journal, I shall feel obliged by its insertion. I am, Sir, your obedient servant,

HENRY R. WOTTON.

108, Great Portland-street,
Oct. 24, 1838.

J. A., a little girl, three years of age, residing at 91, Clipstone-street, Fitzroy-square, became a patient of mine in November, 1837; she was a healthy-looking robust child, with whom one could find no fault, except that she was not so strong upon her legs as she might be, while the abdomen was tense and tumid; her head, spine, and limbs were well developed, and free from sign of rickets. I learnt that the child had had several attacks such as I now witnessed; by one person she was supposed to suffer from disease of the brain, by others from mesenteric disease, and many thought worms were the cause of mischief, in which latter opinion I concurred. When I first saw her I found that there was much fever, hot and dry skin, sleep disturbed by frequent moanings, grinding of teeth, &c., eyes but partially closed; she referred the pain to the head and belly; to the latter the hand was frequently applied with the words "pain mama." After a few days' treatment with calomel and scammony, and the acetate of ammonia mixture, the bowels having passed a good deal of viscid slime of different colours, the fit went off, leaving the tongue, which was before dry and much coated with a brown fur, clean. Though the knotted mucus seemed to form such a nidus for worms, none could be detected; however, the bowels had regained their tone, the belly became much softer and smaller, and the patient was thought well.

These attacks continued to recur at about the interval of a month, for several times, with nearly the same treatment, excepting that latterly I gave the mercury and chalk with rhubarb and cinnamon for a more continued time. On the 6th of April I was requested to attend quickly, and found that, the child having complained of much "pricking," the powder had been given more frequently, and in consequence a quantity of bloody lymph-like matter had been evacuated, and with it a *living leech*; relief soon followed, and since that time the little patient has thrived remarkably, and been free from molestation.

It is worthy of notice that for some hours up to the time this unexpected visitor appeared the pricking was incessant about the rectum. It is what I should call a horse leech, of a dark brown colour, without spots, belly clay colour; its size is that of an ordinary leech; the mouth does not appear triangular as that of the hirudo medicinalis, but sharp like that of the lumbricus teres; it lived a week, during which time it swam about in the undulating manner which leeches do. I still have it in my possession.

I made particular inquiries as to whether any water had been added to the vessel, and was assured by the mother and servant that it was perfectly clean and dry previously, and no one had been near it but the child; that immediately afterwards they perceived the "thing" to extricate itself from the gelatinous matter, and climb up the side of the vessel.

I find that the child, with an elder brother, had often been in the habit of getting to the water-butt, each assisting the other to drink from the tap; I have no doubt but the leech, perhaps when small, was swallowed in this manner, and had been the cause of considerable irritation, producing sympathetic disturbance of the brain.

I recollect two cases being recorded, I think, in THE LANCET, where leeches lived in the human stomach; in one the man was supposed to die from rupture of a vessel, and a leech was found in the stomach with a large quantity of blood; in the other case, a large leech was coughed up during a violent paroxysm, and the man lived.

At my request the water has been closely inspected when drawn, and a leech has been found in every respect like that referred to, but somewhat less, and not knotted, which is the case in the former one.

## POISONING WITH OXIDE OF ARSENIC.

*To the Editor of* THE LANCET.

SIR:—On Friday, the 21st of September, an inquest was held before Mr. Brown, the Coroner of Nottingham, on the body of Thomas Adcock, who died at 2 o'clock in the morning, from the effects of oxide of arsenic, taken (so far as can be ascertained from the evidence) about a quarter before 8 o'clock on Thursday evening. As it was not then known that he had died from poison, and as no testimony could be obtained as to the cause of his death, I was requested to make an examination of the body, and give evidence. As I consider the appearances interesting, both as regards the more immediate effects of the poison upon the stomach, and the remote effects upon the brain, lungs, heart, &c., I have much pleasure in transmitting an account of them to you for insertion in THE LANCET. It would have been still more interesting if I could have given you an account of the symptoms during life, but as I did not see him until after death, I am unable to do so.

The hypertrophy of the heart, and the softening of the thalami and corpora striata, were, no doubt, previously existing states.

I am, Sir, your obedient servant,

JOSEPH THOMSON,
Surgeon to the Nottingham Dispensary.

*Head.*—The sinuses of the brain were full of black blood, and there was slight serous effusion into the cavity of the arachnoid and lateral ventricles, and a little also under the arachnoid, and at the upper part of the posterior lobes of the cerebrum, near to the

longitudinal fissures; this was more fibrinous in its character and stationary, presenting an opaque appearance. The pia mater was so much congested that, when carefully separated from the brain and spread out, it looked like a red membranous sheet. In some places the vessels had given way so as to form spots of extravasation; but these were not numerous, and were situated at the inferior surface of the posterior lobes of the cerebrum. On making the usual sections in the brain numerous large dark bloody points were perceived; the difference in colour between the cortical and medullary portions of the brain was very marked; the thalami and corpora striata were rather softer than natural; the venæ Galeni were distended with blood, as were also the arteries forming the circle of Willis; the cerebellum, on being incised, showed many bloody points; the plexus choroides was not so vascular as might have been expected from the state of the pia mater.

*Chest.*—The lungs were extremely gorged with blood, particularly at the posterior thick border; the right adhered throughout its whole extent, except at the anterior border, to the parietes of the chest, by an old adhesion, in which, towards the posterior border of the lung, there was found a calcareous concretion as large as a small nut; on separating the lung from the ribs, where the adhesion existed, it was accidentally torn, when much dark blood, of a gelatinous consistence, escaped from its textures. I mention this to show the degree of pulmonary engorgement, which was quite as great on the left side where there was not any adhesion; the heart was hypertrophied, particularly the left side, which was full of dark, scarcely coagulated blood, as was also the aorta; the pulmonic cavities of the heart, and the venæ cavæ, were also filled with dark blood and the auriculo-ventricular opening on this side was considerably dilated.

*Abdomen.*—The stomach was much distended, and contained about two pints of a brownish-red fluid, with large portions of viscid mucus, entangling a quantity of white powder; some portions of mucus, containing a similar powder, adhered to the mucous membrane; when rubbed between the fingers it had a gritty feel; the stomach was large and thick, which latter alteration seemed chiefly owing to the injected condition of the mucous membrane, for its vascularity was so great as to give it an uniform red appearance, except at the cardiac extremity, opposite the great curvature, where there was a portion of a bluish slaty colour, and a little to the right of this a good many small dark spots of extravasation, seated chiefly on the rugæ, giving the stomach at this part a mottled appearance; there were not any coagula of blood, nor any solid food contained in the stomach; the mucous membrane was rather more easily separated than usual; the mucous membrane of the duodenum was very vascular, and contained a reddish fluid. No other observation was made worthy of notice, with this exception, that the veins of the mesentery were turgid with dark blood, and likewise those proceeding from the abdominal viscera generally. I think the quantity of oxide of arsenic taken could not have been less than half an ounce, judging from the quantity I collected and allowing for loss.

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## CARBONATE OF SODA.

*To the Editor of* THE LANCET.

SIR:—In Magendie's third lecture on the blood he has advanced an opinion that large doses of carbonate of soda have the power of producing pneumonia, "by liquefying the blood," and causing infiltration of the lungs, and, as the grounds of his belief in this respect, he adduces only a single case. Now, as the weight which attaches to everything advanced on such high authority might influence many in the employment of so common and useful a remedy, I will just simply state, that I am acquainted with two individuals who have taken, for months past, half a pound of carbonate of soda every week, not only without injury, but with the best possible effects as regards the complaints for which they still continue its use. The names of these persons are Birchley and Summers; the former lives at Castlemorton, in Worcestershire, and is well known as the huntsman of the Ledbury fox hounds. Summers is a brewer, living in the latter place.

Birchley for years laboured under a most severe spasmodic affection of the abdomen, for which he had consulted every one of any note, far and near, without receiving any but the most temporary benefit. The paroxysms were so severe that he has been obliged, when hunting, to dismount from his horse, and press with the abdomen violently on the earth, to obtain relief, and this has been observed by many spectators. He has also had these attacks in the night.

When I last saw him, he told me that he had completely cured himself by taking these large doses of the carbonate of soda, and that he occasionally had recourse to it to prevent relapse.

Summers's complaint was somewhat similar, and he learnt the use of the remedy from Birchley, and has taken it with the same beneficial results. I remain, Sir, your constant reader,

CONGREVE SELWYN.

34, Clarence-square, Pittville,
Cheltenham, Oct. 19.

## EXTENSIVE LOSS OF OS FRONTIS AND BRAIN.

*To the Editor of* THE LANCET.

SIR:—On the 17th ult. I was called to a girl, about 11 years of age, whose head had been struck by the handle of the winch (in rapid motion at the time) attached to a draw-well. The sufferer was insensible and motionless, and remained in this state until, with the kind assistance of another surgeon (Mr. Gorst), I had removed some pieces of bone that I ascertained were pressing on parts of the brain, which remained comparatively uninjured by the accident. On ascertaining the extent of the mischief (the greater portion of the frontal bone and brain immediately in contact with it had been dashed from the head) we deemed it utterly impossible to save the life of our patient, and, therefore, our treatment consisted in relieving her sufferings through the few remaining hours of her existence, &c. After lingering 104 hours, during which time she was, for the most part, perfectly sensible, and retaining to the last all the natural functions of the body, she died.

This case, physiologically, as well as phrenologically, involves some points of considerable interest. A great portion of the cerebrum was not only destroyed, but completely swept away, yet the patient survived for upwards of four days, and as many nights, retaining her *mental faculties* entire to the last hour of her existence; nor was her sight impaired, the pupils of both eyes acting in the most regular and natural manner. How these things could exist under such circumstances, and accord with the doctrines of phrenology, as they are at present taught, I am unable to determine. Perhaps some of your more able correspondents will have the kindness to inform me. I am, Sir, your most obedient servant,

JOSEPH HARDING DRAWBRIDGE,
M.R.C.S., and Lic. Apoth. Hall, London.

New Ferry, Cheshire,
October 21, 1838.

## CURE OF CLUB-FOOT.

*To the Editor of* THE LANCET.

SIR:—Will you allow me, through your extensively-circulated Journal, to add my testimony in favour of the operation of dividing the tendons in cases of contraction of the parts to which they are connected, and particularly in the varieties of club-foot. From infancy I experienced a degree of inconvenience from a degree of rigidity of the right ankle-joint, arising from shortness of the gastrocnemii and tendo Achillis. I could not bend the joint beyond the right angle; the foot was higher in the arch of the tarsus than the other, and shorter by about two lines. During boyhood the limitation of the motion of the joint did not affect the bulk of the limb; but about twelve years of age I perceived that it wanted a little of its proper bulk, and at the time when I applied to Dr. Little, besides the reduced bulk of the muscles, there was a perceptible deficiency in the dimensions of the tibia. The inconvenience which I experienced, though not very great, was one of constant recurrence, and was felt in mounting a stair, in walking up hill, on horseback, from the unfirm position of the foot in the stirrup-iron, in dancing, and, in short, in every case where free flexion of the joint was required. I consulted Dr. Little of 126, Fenchurch-street, London, and his opinion being for the division of the tendo Achillis I went up to London as soon as indispensable engagements would permit, and on the 12th of March last submitted to the operation. Dr. Little, assisted by Mr. Hamilton of the London Hospital, performed the operation with his usual skill and dexterity; it occupied only four or five seconds, was scarcely more painful than the common operation of bloodletting; there did not escape one single drop of blood, and I experienced, afterwards, no uncomfortable feeling. I lay on a sofa for three days; had the foot-board applied on the third, the wound in the skin having firmly united; the flexion of the joint gradually progressed till, on the 22nd day from the operation, it was at as great a degree on the operated side as could be given to the other; the foot-board was now left off; I walked about the room with only a common slipper on the foot. On the 9th of April I walked out for the distance of one mile; on the 13th I walked a distance of five miles, and in the beginning of May returned home entirely freed from the stiffness and inconvenience in the joint which I had previously felt; the slight lameness remaining, from the altered condition of the part, soon entirely disappeared, and I now enjoy all the benefit which I was led to expect. I have not only to acknowledge the extreme kindness and attention of Dr. Little to me as a patient, but his polite and gentlemanly attention as a member of the profession. I can add nothing that can raise the esteem which Dr. Little has already acquired; the testimony of those who have before me experienced his kindness is more than sufficient, only allow me to add, that after having thus experienced the treatment followed by Dr. Little, and seen some other cases of his while in London, I have done the operation here with the most entire success. I am, Sir, your very obedient servant,

FREDERICK CUMMING, M.D.

Dundee, October 17, 1838.

## THE LANCET.

*London, Saturday, November* 3, 1838.

THE mortality of the insane is not of less importance than the probability of their recovery, which was examined last week. The most conflicting opinions prevail upon this point. Immaterialists, who see in madness a derangement of the soul, or the manifestations of Satanic influence, naturally conclude that the body may still live on, in a kind of vegetable existence, to its natural term, while the mind is tossed by tempestuous passions. Materialists, like Mr. LAWRENCE, considering these views illusory, and maintaining that mental diseases are symptoms of diseased brain, infer that they have a tendency to shorten life. A very striking illustration of these discrepancies occurred in a recent trial reported by a correspondent in a contemporary journal. The trial took place at York (Fisher v. Beaumont). The plaintiff, solicitor to the Rev. Mr. FRANK, a deceased clergyman, brought an action to recover the sum of £2000 from the *Provident Insurance Company*, assured upon the Rev. Mr. FRANK'S life. In charging the Jury, the Judge said that the question in this case for the Jury was, whether, at the time the policies were effected, Mr. FRANK laboured under any disease, ailment, or infirmity, likely to shorten life? Whether he laboured under insanity, and *insanity have a tendency to shorten life? If insanity had such a tendency, then must they find for the defendant; if not, for the plaintiff. The Jury, after a short deliberation, found for the plaintiff.* Several medical witnesses gave evidence on the trial. Mr. SHEPHARD considered that *insanity had no tendency to shorten life*; Mr. SIMPSON considered that it had. Dr. ANDERSON, of Hull, could not conceive that the mental state of Mr. FRANK was such as had a tendency to shorten life; he conceived Mr. FRANK to be insane. Dr. ALEXANDER was of the same opinion. On these facts the Editor observed,—"The preceding letter touches on a subject of much practical interest and public import. But, notwithstanding the authority cited by our correspondent, we must say that we are strongly disposed to differ with him in opinion: *we cannot look upon insanity as necessarily prejudicial to longevity.*"

Now, what are the facts, as deduced rigorously from innumerable observations? Simply, that a few lunatics, who survive the acute stage of the disease, live even to an advanced age; but that, under the present system of treatment, insanity is one of the most fatal diseases to which the human race is liable. This result is not deduced from the experience of a few asylums, but from nearly all the observations on record, whether made in England, Scotland, France, or America.

| Cases treated. | Died. | Deaths per cent. |
|---|---|---|
| 18185 | 4793 | 26.4* |

At the Glasgow Asylum (1812) the mortality was 10 per cent.; at the English County Asylums 28 per. cent. At Bethlem and St. Luke's lunatics are generally kept twelve months only, and those in a dangerous state are not admitted; when dangerous symptoms supervene they are discharged forthwith, and hurried out of the precincts of the hospitals, lest a high mortality should bring the establishments into bad odour, and excite inquiry into the abusive administration: yet the mortality at Bethlem in the 10 years, 1823-34, was 56 per 1000. The mortality at St. Luke's for 82 years, was as follows:—

| Total cases treated. | Deaths. | Deaths per cent. |
|---|---|---|
| 15328 | 1539 | 10 |

In the English County Asylums, where these sources of error exist to a much less extent, the mortality of the cases is, as has been stated, 28 per cent.; the proportion of deaths is nearly as great in the *Irish Asylums.*†

* Statistics of English Lunatic Asylums. Sherwood.

† Lunatic Asylums, Ireland; Parliamentary Return, 27th April, 1838.

| | Treated. | Died. | Deaths per cent. |
|---|---|---|---|
| Cork Lunatic Asylum,— 1834-8.... | 750 | 221 | 29 |
| Ten District Asylums,— 1837 ..... | 788 | 165 | 21 |

Here is a mortality of 20—30 per cent., and at a minimum, when a fatal class of cases is excluded, not less than 10 per cent. Yet we are told that insanity is not necessarily prejudicial to longevity! What disease, then, shall we place in that category? What is the mortality of other diseases, dreaded most, and deemed most fatal? Rarely ever more than 10 per cent.

The following are a few examples:—*

| | Cases. | Deaths. | Deaths per cent. |
|---|---|---|---|
| Measles ..... | 14051 | 327 | 2.3 |
| Hooping-cough | 8007 | 533 | 6.7 |
| Scarlet fever.. | 2422 | 211 | 8.7 |
| Small-pox..... | 14804 | 1588 | 10.7 |
| Dysentery .... | 3961 | 418 | 10.8 |
| Fever ..... | 1278 | 143 | 11.2 |
| Cholera..... | 255774 | 96081 | 37.6 |

The mortality of typhus fever ranges from 5 to 10 per cent. The mortality of small-pox, at the London Small-Pox Hospital, is 31 per cent.; and the mortality of epidemic cholera, in cities, rarely ever exceeded 50 per cent. when slight cases—as was most injudiciously done — were entirely excluded. The mortality of insanity is twice as great as the mortality of fever;—it is half as great as Asiatic cholera,—yet insanity, it has been maintained by some, is actually conducive to longevity. A jury, supported by *medical evidence*, decided that insanity has not a tendency to shorten life, and, upon that assumption, deprived the *Provident Assurance Society* of £2000.

The source of this error, into which all the tribe of vain reasoners in medicine have been led,—blind leaders of the blind,—who trust to their memory and loose analogies, and figments of the imagination, and anything but direct observation, may be readily explained. The error depends upon an inevitable mental illusion, which figures and facts alone can dissipate. In some lights the intellect sees everything distorted; it cannot avoid forming a false estimate of the nature and relations of things, any more than the eye can perceive that a straight stick, half in water and half in air, is not crooked. In estimating the danger of a disease the judgment is misled by the *intensity* of the morbid action: thus, admit that the mortality in four different diseases is 10 per cent., and that the mean duration of A is 365 days; of B, 36 days; of C, 3 days; of D, 3 hours; the latter disease will appear infinitely the most dangerous, and this will be the popular opinion, until some one take it into his head to *count* the cases, and the deaths. The mean duration of cholera is 6 days; the duration of insanity extends to 650—1500 days; hence the delusion.

The practical bearing of facts of this description is evident. In any system of treatment, regard must be had to the patient's life; and that system of treatment should be finally adopted in which the greatest number of patients escape death, and regain their reason. But how can conflicting systems of treatment be compared when the means for ascertaining this preliminary are neglected? And how can the state of asylums be determined when the mortality is unknown, and never compared? It will, doubtless, be imagined that the mortality varies in the two sexes, at different ages, at different periods of the disease, in rich and in pauper lunatics. Where should the profession look for facts to determine these important points? To the Central Lunatic Commission in the metropolis; to Mr. Dunois; to the Visitors appointed by the Lord Chancellor, or by the Magistrates; in fine, to the gentlemen who are paid a guinea an hour for their services; to the machinery which costs the country £8000 a year in direct expenditure. But in vain will the inquirer look to the Commissioners for one single scientific fact, to elucidate this inquiry. Oh no! The chronometer is assiduously watched, and the hours are told as punctually as a Catholic

* British Medical Almanack, 1838, p. 206; chiefly from observations published by the Austrian Board of Health, Med. Jährbucher, &c., Vols. 3-10.

head-roll; the £8000 a year are accurately expended; but count the deaths, count the recoveries, contribute a single fact to medical science, protect the imprisoned lunatic; generous public, whistle for all this; you surely expect no such results from the metropolitan Commissioners or the county Visitors! They never contemplated this task. Give them the guineas and they are satisfied.

From other sources we discover that the mortality increases with age.

| Ages. | Treated. | Died. | Deaths per cent. |
|---|---|---|---|
| 20—40 | 240 | 28 | 12 |
| 40—60 | 185 | 35 | 19 |
| 60—80 | 54 | 13 | 24 |

The difference in the mortality of the two sexes, at St. Luke's and Bethlem Hospitals, was unusually great.

| | Living one year. | Deaths. | Annual Deaths per cent. |
|---|---|---|---|
| Males.. | 4417 | 774 | 17 |
| Females | 7268 | 522 | 7 |

This applies to the class of "curables," that is, to acute cases; among the incurables the mortality of both sexes was the same. It has been remarked by M. Esquirol, that the mortality at Charenton was higher among males than among females; he attributed this to the greater prevalence of general paralysis among the former; but the question requires further investigation.

The annual mortality of the curables at St. Luke's and Bethlem was 11.1 per cent.; of the incurables, 6.0 per cent.; it may therefore be inferred that *insanity is twice as fatal in the acute as in the chronic stages.*

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Sir Anthony Carlisle's trial is over. He has had an opportunity of meeting the serious charges brought against him by a host of reluctant witnesses. All the facts reported in The Lancet have been fully established, and a darker shade than ever rests upon the transaction. Thomas Holmes was admitted on the 22nd of August, with an injury of the wrist-joint, sustained at the gas factory. He was made Sir Anthony Carlisle's patient on *Wednesday*; Sir Anthony Carlisle saw him on *Saturday*, the 25th. And the three days allowed to elapse had not passed away harmlessly; the disease was not so indolent as the surgeon; the man grew delirious on *Friday*, the 24th. And when did Sir Anthony Carlisle again visit the delirious patient committed to his charge, and with which he forbad the assistant-surgeon to interfere? Again on Saturday? No. On Sunday? No. On Monday? No; not till Tuesday, the 28th, when the man was lying in bed, quite exhausted. And what did the assiduous surgeon do when he visited poor Holmes on *Tuesday*? He "*looked at him*" (one of the friendly witnesses tells the jury); "he did not ask him any question; he made "no inquiry into the previous history of the "case;" but at the hint of a non-professional Governor, wrote a certificate to consign Holmes, then exhausted and convalescent, from an unequivocal attack of *delirium tremens*, to a lunatic asylum. This was the treatment which a patient experienced at the Westminster Hospital.

What is the defence set up? Sir Anthony himself tells the jury that the certificate was *provisional*. "I left a *provisional* "certificate with the Secretary, which, in "case his symptoms should a second time "become violent, might be acted upon by "any of my colleagues." This version is, unhappily, contradicted by no less a person than the Chairman, who was present at the Committee, and had suggested the idea of a certificate of insanity to the facile Sir Anthony. "The certificate," said Mr. Bicknell, "was *not a provisional one*, but in- "tended to be acted upon forthwith by the "Board, and the Board acted accordingly." Yes, the Board acted accordingly; there is documentary proof of this; so that the pretence that the certificate was provisional is left without a leg to stand upon. The following resolution was passed upon the strength of Sir Anthony's *provisional* certificate:—

*Resolved*,—That the Secretary do take *immediate steps to remove* Thomas Holmes [then "*perfectly* convalescent," but exhausted] *from the hospital.*

The Secretary admitted that he was about to drag the miserable patient, then just recovering his senses, from the operation-room, where he disturbed none of the patients.

With the facts before us, we are not going to waste our pages upon Mr. WHITE, or Mr. LYNN, or Mr. HARRISON, or any such small-beer reasoners. They may convince the world, without much difficulty, that their skulls will not break on the hardest mill-stone, or that they cannot distinguish delirium tremens from insanity. Of such triumphs we leave them the undisturbed possession. Sir ANTHONY CARLISLE himself admitted that it was an attack of "delirium tremens," or "drunkard's delirium," a "shaking palsy," as it has been named, by different authorities. In the teeth of this admission the sapient gentlemen contended that HOLMES was a lunatic; they had learned a certain quantity of nonsense by heart for the occasion, and determined to utter it, however irrelevant it might be rendered by facts elicited in the inquiry.

We do not wish to quibble about nosology, but are quite willing "to apply our minds" with the Rev. H. H. MILMAN, "to the common sesne of the case." The Rev. gentleman declared himself unable to decide whether HOLMES was a madman, or had merely delirium tremens; and declared that it would be revolting to him to visit the error of judgment in Sir ANTHONY CARLISLE with severe censure. But this was not honestly *applying his mind* to the common sense of the case. The reverend Rector, no doubt, knows that people become *delirious* in fever, in liquor, without being set down as madmen; and that even rubicund Rectors, who take port freely, are liable, in case of an injury to a joint, or a sinew, to the peculiar delirium under discussion. How would they like, if delirious after an accident, to be set down on certificate as lunatics? If they had sons or daughters, or sisters or brothers, it would not at all satisfy their minds, if it went forth to the world, on this ground, that there was *insanity in the family*. No, in that case the Rector of St. Margaret's would, perhaps, have been able, without any very great effort of common sense, to perceive a difference between the two classes of diseases. But THOMAS HOLMES, you say, is a poor man; he is neither rector or patron, or lord or duke, or dean or bishop. He *is* a poor man; but has a poor man no feelings? Has he no children? Is no evil inflicted upon him when a reckless hand is allowed to brand, with impunity, lunacy upon his brow?

Too much importance should not, however, be attached to this single case; the truth declared by Dr. BURNE has long been painfully felt by every one connected with the Westminster Hospital. "Sir ANTHONY CARLISLE, though an ornament to "his profession in the last century (?) is "now rendered, by advanced years, and "growing infirmities, perfectly unfit for the "performance of the duties of his office in "this establishment. He is not only incapable of performing any capital operation, "but even any ordinary operation, without "danger to his patient."

It has always been felt in public offices that old men, who have even gone through a meritorious career, are very difficult to deal with. This was felt with the judges before the salaries were arranged, so as to tempt them to retire. Young men are expressly excluded from office, but old men, fallen into a second childhood, are disqualified by no similar regulations. This often leads to deplorable results. The septuagenarian is the last to discover that he is no more what he was—that he has outlived his powers;—instead of quietly retiring from the scene, crowned with the glory of his earlier achievements, he lingers like a late wearisome guest, destroying his reputation, till every one feels his imbecility, and only recollects his usefulness. In medicine the results of this infirmity of nature are more disastrous than in other professions; the Rector of St. Margaret's, like the Archbishop of Toledo in "Gil Blas," may continue to the verge of dotage, delivering his homilies, without inflicting any great evils

upon his audience; but when a surgeon deals vengeance round the wards—neglects patients—prescribes without due inquiry—and stamps the delirious patient as a madman—here the evil becomes crying. To allow an officer, notoriously incompetent, to continue at his post, out of respect for his vanity, when the results are harmless, has nothing in it censurable; but to allow the surgeon of an hospital to tamper with the sufferings and lives of the sick, helpless poor, is a spurious humanity, a culpable prejudice.

Like CATO, we never like to see faithful servants, or even old horses, thrown aside, like broken pitchers; let them be led off to end their days in green parks, and a quiet retirement, but let not the old roadsters, because they have a colt's tooth, and can prick their ears at thunder, insist upon breaking their own knees, and other people's necks.

The reverend Rector of St. Margaret's did not inform the Governors whether he deemed ST. ANTHONY—we beg his pardon—*Sir* ANTHONY's bawdry essential to the welfare of the Westminster Hospital, or to the ingenuous youth who frequent its wards.

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## PARLIAMENTARY INFLUENCE OF THE PROFESSION.

MR. BEDINGFIELD, of Stowmarket, in continuation of the subject broached in his recent communication on medical reform, has addressed to us a letter, in which he expresses "his full conviction that the only remedy for the evils under which the profession suffers, consists in the acquisition of political power," and he urges its members to act upon the belief that "were they fairly represented in the House of Commons, the corporate abuses, of which they so loudly complain, would not exist; nor, he adds, had they exercised their due political influence at the last election, could the satraps of Somerset House have libelled, plundered, and insulted the profession." The possession of this political power, is, he remarks, "to be obtained by union. Numbers make the profession formidable, the intelligence of its members renders them influential, and their combined efforts must be irresistible." When the canvassers are next abroad, seeking for votes, he urges that pledges in favour of medical reform, embracing the institution of a National Faculty of Medicine, uniformity of education and qualification, and a change in the Poor-Law Commissionerships, should be demanded from the candidates as primary stipulations for a vote. The profession as a body, twenty thousand strong, must possess as many votes, each of which could at least command six or eight more by the exercise of personal influence. This power, if concentrated on one object, Mr. Bedingfield conceives, would be irresistibly potent. With regard to the funds that might be necessary for securing their political objects, he suggests that every member should "throw the receipts of one day of each year into a common treasury, by this means producing ample provision for every parliamentary purpose." It is impossible to avoid recognising the feasibility of efforts on the part of medical men to enlighten the minds of our legislators on the subject of medical abuses, and to ensure their efficient exertions in Parliament. We have often pressed this fact on the attention of our professional brethren, in the pages of THE LANCET.

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## REPORT OF A HOUSE-VISITOR RESPECTING THE ATTENTION PAID TO THEIR PATIENTS, BY SOME OF THE MEDICAL OFFICERS OF THE WESTMINSTER HOSPITAL.

*To the Editor of* THE LANCET.

SIR:—In your report of the trial of Sir Anthony Carlisle at the Westminster Hospital, Mr. Green is correctly stated to have said, that any resolution affecting Sir Anthony alone, would, he thought, be partial and unjust. As your reporter has neglected to mention Mr. Green's reasons for so thinking, I shall take leave to add them. He informed the Board, that having recently filled the office of house-visitor, he had, in the discharge of his duty, questioned the patients as to when they had been visited by their respective medical attendants, and, to his very great surprise, he was told by those who had the name of Dr. Bright over their beds, that that gentlemen was a *total stranger* to them all; NOT ONE OF THEM EVEN KNEW HIM BY SIGHT, although some of them had been in the hospital *for weeks and months*. On proceeding to the surgical

wards the replies Mr. Green received were equally startling. He found, upon questioning the patients of two of the surgeons, that they had NOT BEEN SEEN BY THOSE GENTLEMEN FOR FOUR OR FIVE WEEKS, and some of Mr. White's patients declared that he was TOTALLY UNKNOWN TO THEM. This straightforward and manly declaration of the house-visitor requires no comment, although it affords a tolerable explanation of the *great anxiety evinced by* Dr. Bright *and* Mr. White *to stifle any inquiry into the remissness of their colleague*, Sir Anthony. I am, Sir, your most obedient,

A GOVERNOR OF THE HOSPITAL.

Monday, Oct. 29, 1838.

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*A Treatise on Inflammation.* By JAMES MACARTNEY, M.D. &c. London, 1838. Longman and Co.

THE volume now before us contains the substance of the doctrines on inflammation which Dr. Macartney has taught for the last twenty years at the University of Dublin. It was time that the "Treatise on Inflammation" saw the light, not only for the purpose of correcting certain erroneous opinions which were entertained respecting Dr. Macartney's theories, but in order that the tribute which attaches to the propagation of ideas, at once novel and of the highest importance, might be rendered to the true source from which those ideas emanated. During the course of a long life, actively and exclusively devoted to the duties of a teacher, Dr. Macartney neglected to avail himself of that publicity to which most of his brother professors have resorted, by making known his peculiar doctrines through the medium of the periodical press, or a work *ex cathedrâ*. Hence his views have been either partially expounded, on the one hand, by pupils and persons imperfectly acquainted with them; or, on the other hand, have been seized upon, disguised, and appropriated by a class of writers who, unable to produce an original idea of their own, are ever on the look-out for some unpublished fact or theory belonging to their neighbours, upon which they erect a goodly structure, and call the building their own.

Dr. Macartney's Treatise has, therefore, appeared at an opportune time, and to have delayed it longer would have been to inflict an injury on the public and on himself. The principles of treatment for wounds and simple injuries which he inculcates are already extensively adopted on the Continent, although the credit of having promulgated them is given to another, while a recent treatise on the "Principles of Surgery," by a professor attached to a Scottish University, contains the major part of Dr. Macartney's *peculiar* ideas upon inflammation, exposed in so methodical and quiet a manner, that any one unacquainted with the history of the school to which Dr. Macartney was attached for so many years, would naturally, and without hesitation, attribute them to the Scottish professor. Yet the name of Dr. Macartney is not whispered in the whole work, nor is the slightest indication given of the "table" under which the "crumbs" have been gathered. But to render larcenies of the kind henceforward impossible, we shall present our readers with a brief analysis of the volume now before us, and then offer some remarks on one or two of the novel doctrines with which it abounds.

The contents of the work may be soon enumerated, for, unlike most writers of the present day, Dr. Macartney has sacrificed everything, save clearness of style, to the inestimable quality of conciseness. The history, phenomena, and consequences of inflammation, are treated of in the first four chapters; then follows an admirable dissertation on the different modes of reparation; to this succeeds an examination of the various causes and species of inflammation. We next find a chapter abounding in original ideas on the differences between congestion and inflammation; and the whole is wound up with a consideration of the remedies for inflammation.

The first chapter, though entitled an "History of Inflammation," is not a dry chronicle of events, but a physiological view of the process as it occurs in animals and man; for Dr. Macartney is essentially a physiologist. We shall endeavour to convey, as briefly as possible, an idea of its contents, although this is a difficult matter, on account of the condensed style which, as we have already remarked, pervades the whole work.

Inflammation does not exist in the vegetable kingdom. When *plants* are injured, the vacancy is filled up by the natural growth of the body; the only approach to inflammation in the vegetable kingdom is

the formation of excrescences on the leaves of plants, arising from the irritation produced by insects; this, however, is merely exuberant growth.

The lower orders of animals, such as *polypi* and other *gemmiparous* animals, never exhibit any of the phenomena of inflammation; when divided into portions, each section becomes a distinct individual, in the same way that the slips and cuttings of a plant serve for the propagation of the species. Worms exhibit similar phenomena; but on dividing the common earth-worm into two portions, Dr. Macartney has found that the anterior half only reproduced the perfect worm. *Insects* do not seem to be susceptible of inflammation after injury, but they present some curious examples of reproduction of parts of the body. Thus the crab and lobster are capable of reproducing an entire claw. The arachnida, also, can reproduce their legs, when young, but not afterwards; for, in insects, youth seems to exercise great influence over the reproductive power. The class *mollusca* is not capable of genuine inflammation; a pearly formation may, indeed, be produced by wounding the membrane which secretes the shell of the oyster; this is analogous to the excrescences of plants. The reproductive power of some mollusca is very considerable; the head of the snail may be cut off, and provided that the ganglion lying above the œsophagus, which is analogous to the brain, be not injured, the loss is repaired by a new growth. Dr. Macartney has never been able to excite inflammation in cold-blooded vertebrate animals; it is in the class of *birds* that we discover the first traces of genuine inflammation as a consequence of external injury. *Quadrupeds* are subject to this disordered action as a result of physical agents and internal derangements, and *man* is more susceptible of it than any other organised being. This brief physiological history "proves (to cite the words of our author) that the powers of reparation and reproduction are in proportion to the indisposition or incapacity for inflammation, and leads necessarily to the induction, that inflammation is so far from being necessary to the reparation of parts, that in proportion as it exists the latter is impeded or prevented; and that when inflammation does not exist, the reparative power is equivalent to the original tendency to produce and maintain organic form and structure."

This is the fundamental doctrine of Dr. Macartney, and it does not require any display of erudition on our part to show how completely opposed it is to the almost universally received doctrines of the present day. Sir A. Cooper, in his "Lectures on Surgery," expresses himself thus:—

"Inflammation is a restorative process; *no wound can be repaired without it.* Even the little puncture made by the lancet in bleeding would inevitably destroy life, if this salutary process did not prevent it."

Such is the deliberate opinion of the first of English surgeons. One of the most recent writers on the practice of physic (Dr. M. Hall) also expresses himself nearly in similar terms;* and the doctrine of the necessity of inflammation for the reparation of injuries has been entertained by all surgeons since the days of John Hunter. This doctrine, indeed, has generally been attributed to Hunter himself, and the manner in which he employs the terms "adhesive," "ulcerative," and "suppurative" inflammations, has led many to believe that he regarded inflammation as a sanatory process; but an attentive consideration of his works will show that Hunter was fully acquainted with the possibility of wounds healing without any inflammatory action. Dr. Macartney cites three passages from Hunter, which seem to indicate that the mind of that illustrious surgeon was fully impressed with the fact alluded to. To the passages quoted by Dr. Macartney, we may add the following:—

"It does not seem necessary for both surfaces that are to be united to be in a state of inflammation, but only for one to throw out the coagulable lymph; nor, indeed, does inflammation of either seem necessary, for union by extravasated blood may take place without *inflammation.*"

Again:—"The present class (simple external wounds) admit of both a natural and an artificial cure. By the natural is meant union by the first intention. When this cannot be obtained, a new bond of union takes place—adhesive inflammation; and if this is lost, a third mode, granulation.—*Hunter's Works by Palmer*, vol. i. pp. 368—390.

Finally, Mr. Hunter says,—"When the former bond of union is lost in a part (union by blood), to produce a new one a secon-

* "Without inflammation the art of [surgery could not exist."—See THE LANCET, 1837-8, vol. 1, p. 209.

dary operation takes place, namely, inflammation; and if this is likewise lost, then a third mode of union will arise, which is by means of granulation.*

To John Hunter, then, is Dr. Macartney indebted for the idea of the possibility of healing wounds without inflammation; but the latter differs from the former, *toto cœlo*, on the point of inflammation being a sanatory process. Dr. Macartney shows, and his whole practice is founded upon this fact, that inflammation, so far from being a sanatory process, is, like other diseased actions, an injurious one; and that wounds heal quickly and well in proportion to the absence of inflammation between their surfaces. It has been said that this is a mere difference of words; but we cannot look upon it in this light. The best amongst English surgeons may agree in the treatment of wounds; still the theory is important, although the practice be nearly identical. Men of large experience may see the necessity of treating injuries in a certain manner, and thus can afford to disregard the principle which should guide their practice; but younger surgeons, in default of experience, must have some principle—some theory—to direct their course, otherwise their practice, floating uncertainly, amidst a variety of contending opinions, will be feeble, hesitating, and unsatisfactory. It were easy, however, to show that even the "heads" of the profession have been led to adopt a faulty method of treatment by incorrect notions respecting the true nature and reparatory effects of inflammation. Thus every one at this side the Channel is loud in condemnation of the manner in which the French surgeons treat simple incised wounds, yet the French method is a necessary consequence of the French theory of inflammation. Again: Why was the treatment of hydrocele confined, for so many years, to injection of an irritating fluid, without any attempt having been made to improve a practice which was allowed on all hands to be attended, at least, with some risk? Because, according to the prevailing notions of the necessity of inflammation, for the healing of wounds and closing of cavities, it was thought useless to attempt any other mode of cure than that which depended on the excitement of inflammation; yet the method of acupuncture proposed, and successfully employed by Mr. Lewis and many other surgeons, triumphantly shows that even the obliteration (practically speaking) of a serous sac may be obtained by means much more simple and safe than that of exciting inflammation throughout its parietes. It were easy for us to multiply examples of a similar kind, but we deem it to be unnecessary. In medicine the practitioner must be acquainted with the *nature* of the disease which he treats, or his practice will ever be irrational; in the same way, unless the surgeon have correct notions of the various reparative processes which Nature employs for the cure of injuries (and which he can do little more than guide), his manipulations will more frequently do mischief than good. But to return to our author. The most remarkable part of the 2nd Chapter, which treats of the "phenomena of inflammation," is that devoted to a consideration of the pain. Dr. Macartney remarks, that the pain is more difficult to explain than any of the other symptoms of inflammation. It might appear natural to attribute the peculiar sensibility of inflamed parts to their increased vascularity augmenting the nervous sensation; but the varieties of pain felt in different tissues, when inflamed, cannot be altogether explained upon this principle. In inflammation of the skin and mucous membranes, the pain resembles that from the injury of high temperature. When serous membranes are inflamed, the pain is usually acute and tensive. If the muscular structure be inflamed, the pain partakes of the peculiar sense of fatigue. Inflammation of bones and ligaments gives rise to an aching sensation, with a peculiar morbid tenderness of the surrounding tissues. In inflammation of the nervous substance, we have sometimes an excruciating, intolerable pain; at other times it is dull and aching. When new formed or imperfect structure is the seat of inflammation, the pain has a peculiar morbid character, of which it is very difficult to give an accurate idea by words. Hence it would appear that the varieties of pain in an inflamed part depend partly on the character of the inflammation and partly on the structure of the parts engaged.

Having passed in review the phenomena of inflammation, the author proceeds to consider its consequences. These are always *injurious*, and consist of chemosis, œdema,

* l, c. vol. iii. p. 253.

vesication, suppuration, and disorganisation, or death of the part. We cannot follow Dr. Macartney through the interesting remarks which he offers on these different processes, but would rather direct attention to a circumstance which has, no doubt, already struck the intelligent reader. Dr. Macartney does not regard the effusion of coagulable lymph as being a consequence of inflammation. This is another capital doctrine of the work before us, in which the author differs from all writers who have preceded him, and from most of the surgical authorities of the present day. Dr. Macartney, however, supports it by numerous arguments derived from physiological considerations and practical experience. We shall enter fully into an examination of this doctrine in a subsequent article, which we propose to devote to this important and highly original work.

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## UNIVERSITY OF LONDON.

THE following Report was handed to us a fortnight since in proof. It should be observed, that it is *a proof* only, and hence none of the arrangements are to be considered as final. As we could not hope to change the views of a body, the members of which may be considered to have bestowed unwearied attention on the subjects embraced in this curriculum, by any remarks which it might seem incumbent on us to offer on the "Report," we shall refrain from criticism until the arrangements of the Council are completed for the inexorable guidance of the candidates for university degrees and honours.

[*Proof.*]

## REPORT OF THE COMMITTEE OF THE *FACULTY OF MEDICINE* ON THE SUBJECT OF GRANTING DEGREES IN MEDICINE.

CANDIDATES for Degrees in Medicine shall be required to have taken a Degree in Arts in this University, or in a University the Degrees granted by which are recognised by the Senate of this University; or, they shall be required to have passed the "Examination in Arts" for Medical Students, conducted by the Examiners in Arts of this University.

### EXAMINATION IN ARTS.

The Examination in Arts shall take place twice a-year, in the months of May and October.

Every candidate, at least fourteen days before being admitted to this examination, shall transmit to the Registrar a certificate showing that he has completed his seventeenth year.

A fee of £5 shall be paid before examination. If the candidate fail to pass the examination the fee shall be returned to him.

The examination shall be conducted by means of printed papers; but the Examiners shall not be precluded from putting *viva voce* questions on the written answers, when these appear to require explanation.

Candidates for this examination shall be examined in the following subjects:—

*The Greek and Latin Languages.*—One Greek and one Latin subject, of a specified extent, to be selected one year previously by the Committee of the Faculty of Arts from the works of the under-mentioned authors:—*Homer*, one book; *Xenophon*, one book; *Virgil*, one book of the Georgics, or the sixth book of the Æneid; *Horace*, one book of the Odes; *Sallust*, The Conspiracy of Cataline, or the War with Jugurtha; *Cæsar*, The Civil War, or the fifth and sixth books of the Gallic War; *Livy*, one book; *Cicero*, the treatises De Senectute and De Amicitiâ, or two of the shorter, or one of the longer orations.

*The Grammatical Structure of the English Language.*

*The French or German Languages.*

*History and Geography.*—History of Greece to the death of Alexander; History of Rome to the death of Augustus; History of England to the end of the seventeenth century; the outlines of ancient and modern geography.

The papers in classics shall consist of passages to be translated, accompanied by questions in grammar, history, and geography.

Proficiency in English composition will be judged of by the style of the answers generally.

*Arithmetic and Algebra.*—The ordinary rules of arithmetic; vulgar and decimal fractions; extraction of the square root; addition, subtraction, multiplication, and division of algebraical quantities; proportion; arithmetical and geometrical progression; simple and compound interest; discount, and annuities for terms of years; simple and quadratic equations; use of logarithms.

*Geometry.*—The first book of Euclid; mensuration of surfaces and solids of the simpler forms.

*Mechanics.*—Composition and resolution of forces; the mechanical powers; centre of gravity; general laws of motion; mo-

tion of falling bodies in free space and down inclined planes.

*Hydrostatics, Hydraulics, and Pneumatics.*—The pressure of fluids is equally diffused, and varies with the depth; the surface of a fluid at rest is horizontal; specific gravity; a floating body displaces exactly its weight of the fluid, and is supported as if by a force equal to that weight pressing upwards where the centre of gravity of the displaced fluid, if restored, would be; weight and pressure of the atmosphere; the barometer; theory of winds; the siphon; common pump and forcing pump; the air-pump; the diving-bell; the steam-engine.

*Acoustics.*—Impulses propagated through the air, or other medium, to the ear, produce the sensation of sound; similar impulses following quickly at equal intervals, are heard as a continuous sound, of which the pitch depends on the number of impulses in a given time; such impulses reflected from surfaces constitute echoes.

*Heat.*—The general phenomena of radiation and conduction, of the expansion of bodies, and of the changes from one to another of the solid, liquid, and aëriform states; the thermometer; temperature of the atmosphere; hygrometrical condition of the atmosphere; theory of dew.

*Electricity and Magnetism.*—The general facts.

*Optics.*—The laws of reflection and refraction; lenses; the camera obscura; the telescope; the microscope; the eye considered as an optical instrument.

*Astronomy.*—The apparent motion of the heavens round the earth; the apparent motion of the sun through the fixed stars; the phenomena of eclipses; general arrangement of the solar system.

*Elements of Logic.*

*Elements of Moral Philosophy.*

No candidate shall be approved by the Examiners unless he show a competent knowledge in all the subjects of examination.

Candidates who have matriculated in Arts will be exempted from examination in Greek and Latin, in history, geography, and mathematics, and shall pay a fee of only £3.

### DEGREE OF BACHELOR OF MEDICINE.

Candidates for this degree shall be required to produce certificates, showing that, subsequently to having taken the degree of Bachelor of Arts, or to having passed the examination in arts for medical students, they have been engaged during four years in the study of medicine, and have attended courses of instruction on the following subjects, and of the extent here specified, at one or more medical institutions or schools recognised by this University:—

*Minimum Number of Lectures.*—Botany, 40; materia medica and pharmacy, 80; chemistry, 80; descriptive anatomy, 100; comparative anatomy, 40; physiology and general anatomy, 100; general pathology and pathological anatomy, 60; general therapeutics, 40; principles and practice of medicine, 80; principles and practice of surgery, 80; midwifery and diseases of women and infants, 50; medical jurisprudence, 40; hygiene, 40; practical chemistry, 30 lessons; practical anatomy, two winter sessions; clinical medicine and surgery, in an hospital, during the last three years of the medical curriculum; practical medicine and surgery, in an institution in which the treatment of patients is entrusted to the senior pupils, under the superintendence of the medical officers, during six months.

Previously to the year 1841, attendance on separate courses on the following subjects will not be insisted on:—Physiology and general anatomy; general pathology and pathological anatomy; general therapeutics. The academical year shall consist of a winter session and a summer session; the former to continue not less than six months, the latter not less than three months.

### ORDER OF STUDY.

The following is recommended as the order of study:—

FIRST YEAR.

*Winter Session.*—Descriptive anatomy; chemistry; materia medica and pharmacy.

*Summer Session.*—Comparative anatomy; practical chemistry; botany.

SECOND YEAR.

*Winter Session.*—Physiology and general anatomy; practical anatomy; principles and practice of surgery.

*Summer Session.*—General pathology and pathological anatomy; general therapeutics.

Clinical instruction.

THIRD YEAR.

*Winter Session.*—Principles and practice of medicine; practical anatomy.

*Summer Session.*—Midwifery and diseases of women and infants.

Clinical instruction.

FOURTH YEAR.

*Winter Session.*—Hygiene.

*Summer Session.*—Medical jurisprudence.

Clinical instruction.

Practical medicine and surgery.

*Previous Examination.*

The previous examination shall take place twice a-year, in the months of May and October.

The candidate, before being admitted to this examination, shall be required to produce certificates, showing that he has been engaged during two years in the study of medicine subsequently to having passed the examination in arts.

The fee for this examination shall be £2. If the candidate fail to pass the examination the fee shall be returned to him.

The examination shall be conducted partly by means of printed papers, and partly by *viva voce* interrogation. The student shall be called upon to point out and describe the different objects under examination.

Candidates shall be examined in the following subjects:—Descriptive anatomy, chemistry, botany, materia medica, and pharmacy.

*Examination for Honours.*

Candidates who have passed the previous examination, and who have produced certificates that they have not completed their 21st year, may be examined for honours in the following subjects:—Anatomy, materia medica, and botany, chemistry, and pharmacy. The examination shall be conducted by means of printed papers.

In each of these three subjects, a gold medal of the value of £5 shall be awarded to the candidate who shall distinguish himself the most, if, in the opinion of the Examiners, he possess sufficient merit; and should one candidate obtain two of the medals, he shall further receive £30 per annum, for the next two years, from the University chest.

*Examination for the Degree of Bachelor of Medicine.*

The examination for the degree of Bachelor of Medicine shall take place twice a-year, in the months of May and October.

No candidate will be admitted to this examination within two years after having passed the previous examination.

The candidate shall be required to produce a certificate of moral character from a teacher of each school or institution at which he has studied, as far as the teacher's opportunities of knowledge extend.

The required certificates shall be transmitted to the Registrar at least fourteen days before the examination begins.

The fee for the degree of Bachelor of Medicine shall be £15. If the candidate fail to pass the examination the fee shall be returned to him.

The examination shall be conducted partly by means of printed papers, and partly by *viva voce* interrogation.

In anatomy, the candidate shall be required to dissect a portion of the human body, and to demonstrate from preparations; and in chemistry, to show his power in testing, and generally in chemical manipulation.

[When the necessary arrangements can be effected, the candidate's practical knowledge in medicine and surgery will be tested at the bed-side.]

Candidates shall be examined in the following subjects:—

*First day.*—Descriptive anatomy, general anatomy and physiology, surgery.

*Second day.*—Chemistry, medical jurisprudence, midwifery, and the diseases of women and infants.

*Third day.*—General pathology and therapeutics, hygiene, practical medicine.

*Examination for Honours.*

Bachelors of Medicine who have produced a certificate that they have not completed their 25th year, may be examined for honours in one or more of the following subjects:—Anatomy and physiology, surgery, medicine.

The examination shall be conducted by means of printed papers.

In anatomy and surgery the candidate shall also be required to dissect and demonstrate.

In each of these three subjects a gold medal of the value of £10 shall be awarded to the candidate who shall distinguish himself the most, if, in the opinion of the Examiners, he possess sufficient merit; and should one candidate obtain two of the medals, he shall further receive £50 per annum, for the next three years, from the University chest, with the style of University Medical Scholar.

DEGREE OF DOCTOR OF MEDICINE.

The examination for the degree of Doctor of Medicine shall take place once a-year, in October.

Candidates for this degree shall be required to produce certificates that, subsequently to having taken the degree of Bachelor of Medicine, they have attended to practical medicine for the space of two years in an institution recognised by this University, or have been engaged during five years in the practice of their profession. One year of attendance in an institution for practical instruction will be considered equivalent to two years of practice.

Candidates shall also be required to produce a certificate of moral character from two persons of respectability, fourteen days at least before the examination.

The fee for this degree shall be £25. If the candidate fail to pass the examination the fee shall be returned to him.

Candidates shall be examined in the following subjects:—

*First day.*— Physiology, medical jurisprudence, practical medicine.

*Second day.*— General pathology and therapeutics, hygiene and medical statistics, mental diseases.

*Thesis.*—The candidate shall be required to write and defend a thesis on some branch of medical science, or of one of the collateral sciences. The thesis may be written in English or in Latin, and must be delivered to the Registrar at least fourteen days before the examination.

*Certificates of Proficiency.*

Candidates who desire to obtain a certificate of proficiency in surgery, or in midwifery, shall, in lieu of the second part of the examination, undergo an examination in the subject in which they desire a certificate.

The desire to be examined for such certificate must be stated on the thesis when delivered to the Registrar.

Doctors of Medicine of this University who, at a period subsequent to that of taking their degree, may be desirous of obtaining a certificate of proficiency in surgery or in midwifery, may be admitted to examination, on giving the necessary notice and paying a fee of £10.

MEDICAL SCHOOLS AND INSTITUTIONS.

Medical schools shall be required to possess ample means of illustrating their several courses of lectures; as, a museum of anatomy, of pathological anatomy, of materia medica and botany, a chemical laboratory, &c.

Lecturers shall examine their pupils after at least every fifth lecture.

Certificates shall be in the following form:—This is to certify that during the session of 18 attended my course of instruction on which consisted of lectures and examinations, and that he was present at examinations.

For *practical chemistry*, the teacher shall certify that the pupil diligently operated during the course, which consisted of lessons; and for *practical anatomy*, the teacher shall certify that the pupil dissected carefully during at least two winter sessions.

Certificates for more than two subjects will not be received from the same teacher.

HOSPITALS.

Each hospital shall accommodate at least one hundred patients.

A clinical lecture on medicine and a clinical lecture on surgery shall be given at least once a week.

The histories of the diseases shall be recorded in a journal, to be open to the inspection of the pupils.

The *post-mortem* examinations shall be made in the presence of the pupils, and the appearances recorded in the journal of cases.

STUDENTS ALREADY ENGAGED IN THE STUDY OF MEDICINE.

Students already engaged in their medical studies shall be required, during the time yet requisite for the completion of their education, to conform, as far as possible, to the course of study enjoined by this University.

Students of not more than two years' standing in October, 1838, shall be required to pass the subjoined examination in arts and the *previous examination*.

Students of more than two years' standing in October, 1838, shall be required to pass the subjoined examination in arts before being admitted to the examinations for the degree of Bachelor of Medicine.

They shall be required to produce a certificate that they have completed their twenty-first year; and also a certificate of moral character, from a teacher in each school or institution at which they have studied, as far as the teacher's opportunities of knowledge extend.

The fee for the examination in arts, shall be £5; for the examination in medicine, £20. Should the candidate fail to pass either examination the fee shall be returned to him.

*Examination in Arts.*

*Latin.*—Celsus, the first four books; Heberden's Commentaries.

*Natural Philosophy.*—As in the examination in arts.

*Examination in Medicine.*

The examination in medicine shall be the same as the examination for the degree of Bachelor of Medicine. Candidates who have not passed the *previous examination* shall also be examined in botany, materia medica, and pharmacy.

PRACTITIONERS DESIROUS OF OBTAINING DEGREES IN MEDICINE.

*Degree of Bachelor of Medicine.*

Legally qualified practitioners in medicine or surgery may be examined for the degree of Bachelor of Medicine.

The candidate shall be required to produce a certificate of moral character from two persons of respectability, fourteen days at least before the examination.

The fee for the examination in arts shall be £5; for the examination in medicine £15. If the candidate fail to pass either examination, the fee shall be returned to him.

*Examination in Arts.*

The examination in arts shall be the same as that required of students already engaged in the study of medicine.

*Examination in Medicine.*

Candidates shall be examined in the following subjects:—

*First day.*—Anatomy, physiology, surgery.

*Second day.*—Chemistry, medical jurisprudence, midwifery and the diseases of women and infants.

*Third day.*—Materia medica and therapeutics, pathological anatomy, practical medicine.

*Degree of Doctor of Medicine.*

Legally qualified practitioners in medicine or surgery, of five years' standing, may, after having taken the degree of Bachelor of Medicine in this University, be examined for the degree of Doctor of Medicine at the next term for that examination.

The candidate shall be required to produce, at least fourteen days before th

examination, a certificate of moral character from two persons of respectability.

The fee for this degree shall be £25. If the candidate fail to pass the examination, the fee shall be returned to him.

Candidates shall be examined in the following subjects :—Pathology and therapeutics; hygiene, and medical statistics; mental diseases.

*Thesis.*—The candidate shall be required to write and to defend a thesis on some branch of medical science, or of one of the collateral sciences. The thesis may be written in English or in Latin, and must be delivered to the Registrar at least fourteen days before the examination.

*Examiners.*

The number of Medical Examiners shall be fifteen; to form three sections according to the three parts of the examination for the degree of Bachelor of Medicine. The Examiners for the previous examination, and for the degree of Doctor of Medicine, to be agreed upon each term.

The Examiners shall be appointed at a meeting of the Senate, to be held in June or July. [The appointment for next year shall take place at a meeting of the Senate, to be held in February, 1839.]

They shall continue in office for one year from the time of their appointment.

They shall have power to discontinue the examination of any candidate who may misconduct himself.

They shall each receive from the University chest.

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ADDRESS FROM THE

## GLASGOW MEDICAL ASSOCIATION

TO THE

## PRACTITIONERS OF MEDICINE IN SCOTLAND.

Fellow Practitioners,

The Glasgow Medical Association, feeling that the time has arrived when a general movement for the redress of grievances ought to be made, calls upon the practitioners of medicine in Scotland to make a united effort in favour of Medical Reform, and to promote, by all constitutional means, the equalisation of the rights and privileges of the profession throughout the empire. As our brethren in England have already, through the medium of the British Medical Association, shown the advantages of union and concerted effort in enlighening the public mind on the injustice and impolicy of existing usages and laws affecting our profession, the Glasgow Medical Association, instituted for similar purposes, and emulating the spirited exertions of their brethren in the south, would urge upon their fellow practitioners the necessity of concentrating *their* energies on the protection and advancement of their common interests, and of taking into their serious consideration the propriety either of joining, as honorary members, the Association which already exists in Glasgow,—of forming one General Union for Scotland,—or of establishing Sectional Unions in separate districts, attached to a common centre, all and each of these societies having for their object, the promotion of the great ends to which allusion has been already made.

The Association in Glasgow has existed for six months, and already numbers eighty members, who are either ordinary or honorary, according as they are resident or non-resident within the parliamentary boundaries of Glasgow. The management of its business has been entrusted, (subject, however, to the revision of the Association itself), to a Council composed of thirteen, annually elected by ballot. Except in extraordinary circumstances, the Association meets only four times a year, and the Council in general holds only monthly meetings. The chief objects which the Association has in view, may be shortly stated as follows, premising, that in advocating Medical Reform, our members, comprising persons of all shades of political opinion, have united, not to advance the interests of any great political party, but solely and exclusively to increase the respectability and *status* of the medical profession.—I. Liberty to every regularly qualified practitioner to practise, without let or hinderance, in any part of her Majesty's dominions.—II. The abolition of all exclusive claims to the enjoyment of those privileges which belong by right to *every* member of the profession, but which are at present possessed by monopolists, whose individual interests are commonly opposed to those of their fellow practitioners in general.—III. That the affairs of the profession, including education, government, public hygiene, regulation of the medical and surgical department of hospitals, asylums, dispensaries, &c., be managed entirely by the whole body of the members.—IV. That all regularly qualified practitioners be entitled to act and be recognised as teachers of medicine, and be all equally eligible to medical and surgical appointments in all hospitals, asylums, dispensaries, &c.—V. The suppression of quackery.—VI. The institution of a coroner's inquest for Scotland.

These, and any other measures included under the comprehensive words, Medical Reform, are the objects for which the Glasgow Medical Association was called into existence, and towards the promotion of which, it now calls for the support and co-operation of every practitioner who would wish to see his profession emancipated from the degarding bondage in which it has been so long enthralled by monopoly, illiberality, and selfishness. Come forward then, fellow practitioners, as one man, and

help us in this noble enterprise, and recollecting that public spirit, like fame,

Mobilitate viget, viresque acquirit eundo,

be it your task, to add to the ranks of medical reform a number of fellow-labourers so imposing, that every barrier which monopoly has set up to impede our progress shall be levelled to the dust, and the last vestige of corruption at length swept away from every avenue which leads to honourable preferment in the Temple of Medicine.

P. S.— Communications on this subject will be received by the interim Secretary of the Association, J. P. Glen, Esq., St. Andrew-street, Glasgow.

12th October, 1838.

## MEETING OF KING'S COLLEGE STUDENTS.

MR. LATTER'S DISMISSAL

A meeting of the friends of Mr. H. Latter, late demonstrator of King's College, was held on Saturday evening, the 17th, at the Albion Tavern, Great Russell-street, J. J. Adams, Esq., surgeon, of Finsbury-square, in the chair. The Chairman, in a brief address, stated that the chief object of the meeting was for the purpose of testifying to the high character of Mr. H. Latter, as a teacher and friend of the pupils of King's College. Mr. Latter had been appointed, four years since, as demonstrator of King's College, by the Council of that institution, during which period no man could have exerted himself with greater success and satisfaction to the whole body of students. At a period when Mr. Latter's services were becoming peculiarly valuable as a teacher, he, unexpectedly, received a notice of dismissal from his post, which notice was signed only by Dr. Todd and Mr. Partridge. (*Hear, hear.*) The notice stated that the reason of the dismissal resulted from the sense of duty which they owed to King's College. What this "sense of duty" consisted in it would be curious to know. The moral character of Mr. Latter was unimpeachable, his capacity undoubted, and his attention unwearied. Was he becoming too great a favourite with the students? or, after working gratuitously for three years, did the promised emolument for the fifth session too much interfere with the incomes of the professors of anatomy in the College? First, they had *no right* to remove him; but it was so managed, that at the expiration of six weeks, the Council informed Mr. Latter, through their Secretary, that they "found it their painful duty to acquiesce in the recommendation of Professors Partridge and Todd," still leaving Mr. Latter in total ignorance of the cause of his removal. The Chairman trusted the students would not, on this occasion, render themselves liable to the just reproach of having allowed a valued teacher to leave an institution without showing their regard in some substantial manner. To the disgrace of the pupils of King's College, Mr. Green had been allowed to retire without even the expression of thanks for his important services.

It was moved, seconded, and carried unanimously,—"That a subscription be immediately entered into for the purchase of a piece of plate, to present to Mr. Latter." After a few remarks from other gentlemen, the meeting seperated, the Chairman announcing that the amount of subscriptions was already nearly £10, although the subscription was limited to 5s. from each person.

## NOTE FROM MR. MARSHALL.

*To the Editor of* The Lancet.

Sir:—The correspondent referred to in this day's Lancet, who mentions, in justification of the statement reflecting upon Dr. Robert Lee in a former Number, "that the fact respecting the 'Doctor's' rejection of a 'general practitioner,' as his coadjutor, was given on Mr. Marshall's authority," has misrepresented me, and misinformed you; nor is it any excuse for his misrepresentation of me, and his slander of the Doctor, to add, "It is possible that Mr. M. was misunderstood."

As for the "simultaneous condemnation" of the "Doctor's" dislike of "general practitioners," which I am reported to have "honestly given in terms not at all equivocal or obscure," I have no recollection of any such thing, and utterly disavow having sat in judgment either upon Dr. Lee's predilections or his prejudices, being equally ignorant of both. I am, Sir, your obedient humble servant,

William Barrett Marshall, R.N.
6, Cheyne-row, Chelsea,
Oct. 27, 1838.

## PRESERVATION OF BODIES BY ARSENIC.

Several attempts have been recently made, by an interested party, to foist upon the public an alleged discovery for the preservation of dead bodies. The political journals have been made the medium for puffs of the pretended discovery alluded to; the attention of one branch of the Legislature has been called to this mode of preserving human flesh; and, what is still more strange, certificates in its favour have been lavishly distributed by various teachers of anatomy, and other professional men in the metropolis. We should have thought that it became

teachers of anatomy, above all others, to have made themselves acquainted with the processes usually employed for the preservation of bodies after death. Various substances have been used for this purpose; the matters employed, and the modes of using them, have been frequently described both in this and in the continental journals; and it seems to us that teachers of anatomy might employ themselves much more beneficially in experimenting with the substances alluded to, than in lending their names to forward the mercenary views of adventurers.

Amongst the substances which have been most frequently employed for the purpose of retarding the decomposition of the human body is arsenic, and the following experiments, an account of which we extract from the *Calcutta Quarterly Journal*, show with what advantage it may be applied, even in a warm climate.

The experiments to which we allude, consist in the injection of an arsenical solution into the blood-vessels shortly after death, in the manner presently to be detailed. The method in question was first recommended by Dr. Tranchina, of Palermo, who published an account of it in the Sicilian Journal, *La Cerere*, in 1834.

On the 9th of March, a favourable subject having been selected, a solution, consisting of 1lb. of white arsenic boiled in 11 pints of water, was injected into the carotid arteries. The injecting tube was first introduced into the vessel of the right side, and pointed upwards so as to send the injection through the head. The pipe was next placed in the left carotid, and a further portion of the solution injected downwards through the arch of the aorta. Sufficient pressure was employed to return the fluid through the superficial veins. The remainder of the solution was then thrown into the abdominal cavity through a very small opening, so as to prevent the access of air. The subject was then allowed to remain undisturbed up to the 19th March in a room at the temperature of the season, varying from 85° to 90°. On that day the only external change observable was a slight dryness and shrivelling of the extremities of the fingers and toes; the eyes were sunken and covered with a white efflorescence, and the cuticle generally could be scraped off with ease. The abdomen was opened, and the muscles were seen to be as red and fresh as though the individual had died but an hour before. The external coat of the intestinal canal was slightly red, but all the other viscera were natural in appearance, and free from the usual abdominal fœtor. On cutting into the intestines, the morbid characters of dysentery, the disease of which the patient had died, were beautifully marked. Huge sloughs were hanging from the ulcerated mucous membrane of the colon, and the usual signs of inflammatory action were as distinctly visible upon the coats of that part of the bowels, as they could be in the most recent subject. The thorax presented appearances perfectly fresh and natural. The cranium was then opened, and the brain was observed to be similarly unchanged; indeed, it was so remarkably firm and fresh, that Professor Goodeve took it away with him to serve for his anatomical lecture upon that organ; and having undergone the usual soaking in alum-water for a few hours, it could not be surpassed as a subject for demonstration by the most recent brain ever extracted. Perhaps this is the first time that the brain removed from a corpse nearly a fortnight after death, could ever be made available for the purposes of the anatomical lecturer. We all remember how hopeless, even in Europe, under the most favourable circumstances, is the task of unravelling the mysteries of the cerebral labyrinth in a brain which has been allowed to remain in the body more than a few hours after death; how much less, then, could this have been expected in a tropical climate, with a thermometer at 90° for a great part of the day.

The abdomen and scalp of the body under experiment were then sewed up with care, and some more of the arsenical injection was introduced into the cavities which had been exposed. The body was again *left to repose*, and up to the present day, (the 1st of April), upwards of three weeks after death, but little further alteration has taken place in its external appearance, except an increased shrivelling and some slight signs of putrefaction in the dorsal region.

The success of the first experiment emboldened the Professors of the Medical College, Calcutta, after a few days, to inject other bodies. As yet, it was not known whether dissection would interfere with the antiseptic properties of the arsenic, for the inventor spoke of the injection only as a means of preserving the bodies entire; but we rejoice to say, that the arsenic loses none of its preservative characters, although the whole body be subjected to the operations of the anatomist.

Several subjects have now been injected with the preparation in question, and all have been preserved in a degree which has astonished those who have had an opportunity of observing them. Many of these bodies remained under examination for seven and eight days,—until, indeed, they were completely dissected — before any putrefaction commenced. Of these some were permitted to continue untouched for a day or two before they were dissected, with a view to permit the arsenic to permeate all

the tissues of the body, and become thoroughly infiltrated into every part. Others were given up to the knife the instant the injection had been completed;—both cases were attended with similar results; though, perhaps, the former is, upon the whole, the preferable method where minute dissections requiring a length of time for their completion are intended. With a view to test the the value of the arsenic, several bodies which had not been *arsenicated* were placed in the same room with those injected, but the heat of the climate had such an effect upon them, that they putrified rapidly, and were perfectly intolerable and useless in eight and forty hours. In one subject an injection of alum, nitre, and common salt, was introduced into the upper extremity; but this preparation, although strongly recommended, was utterly inefficient: indeed, it seemed rather to hasten putrefaction than retard it.

It will be observed, that, in the first experiment, the injection was made through the carotids: this was in obedience to the directions of the inventor, because, he says, that it is important to prevent the air from entering the cavities of the body, which would occur if the thorax were divided and the injection driven from the aorta. But in all the subsequent cases in the Medical College, the injections were introduced in the ordinary mode, by lifting up the sternum and inserting the pipe into the left auricle of the heart. This, which is far less troublesome than the former method, is found to be equally efficacious for all ordinary purposes, although, perhaps, it may be advisable to follow Dr. Tranchina's directions, where it is an object to preserve the body untouched for any great length of time. It is right to state, also, that some pieces of flesh have been preserved in the solution for several days together without putrifying—in fact, substances actually in a state of decomposition were restored to a certain degree of sweetness, and the fœtid odour which exhaled from them speedily destroyed by remaining a few minutes in the arsenical liquor.

## BOOKS RECEIVED.

Introduction to the Modern Classification of Insects, &c. By J. O. Westwood, F.L.S. Part VII. London: Longman and Co.

The Veterinarian, edited by Mr. Youatt. November.

Outlines of General Pathology. By G. Freckleton, M.D. London: Parker, 1838. 8vo. pp. 267.

The Civil Engineer and Architect's Journal, No. 14.

## TO CORRESPONDENTS.

*Dr. Gretton's* letter shall appear next week.

The letter of *Mr. Alfred Bower* has been received, as also one from *Mr. Walker*, on the "immoveable apparatus."

Attention shall be paid to the communication of *Mr. Simpson*.

We may cordially agree with the determination of Mr. W., "never to give a certificate, either with or without a fee, to any office to whose circular the name of the libeller of the medical profession is appended as managing director," but we cannot recognise the liability of any office to pay for an opinion that is sought by the candidate for its policy. It is no reply to this, that the application comes through the office to the medical attendant. That is only the indirect and more cautious mode of proceeding. If the latter refuse the certificate without a fee, the directors simply say to the applicant, "Mr. A or B declines to certify to your health; we decline to grant you a policy." "But I must have the policy," says the applicant, and to obtain it he either pays or persuades his medical attendant to give the certificate. The latter should make him *pay* for it, that is all. There is nothing obscure or difficult in the question. The argument involved is simplicity itself.

Our correspondent at Stroud will find in THE LANCET for Oct. 28, 1837, some remarks expressing our views on the subject discussed in his communication of Oct. 23. Medical men should recollect that they are not the directors of the office, but the applicants for the policies, who apply for certificates of health, and of course the very proper demand for a fee should be made on the latter. Whenever *the office* requests the opinion, it will undoubtedly pay for it, or be liable to the practitioner for the amount of remuneration. The assurer wants the opinion in order to succeed in his precautionary objects. It is the business of the paid medical referee of the office to protect the directors against imposition, so far as he can. The demand for additional evidence is made by the office on *the applicant*, not on the applicant's *medical attendant*, and, in compliance with that demand, it is the dutyof the patient to remunerate the witness for his trouble.

*Medicus.* It would be quackish and unfair in a public journal, to make any such announcement as is requested. There are undoubtedly many who are all equally competent.

ERRATUM.—In Dr. Harnier's paper on the Pyrmont Spa, Vol. II., 1837-8, col. 2, line 18, for "20° Reaumur," read 11°.